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**The Regime Complex for Plant Variety Protection:
Revisiting TRIPS Implementation in Nigeria**

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A thesis submitted in partial fulfilment of the requirements for the
degree of
Doctor of Philosophy

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Dedication

This thesis is dedicated to Dwijen Rangnekar (17 April 1965 – 30 October 2015),
your legacy lives on.

Declaration

I hereby declare that this thesis is my original work. I confirm that information derived from other sources have been indicated, and no part of the thesis has been submitted for any other Degree or Diploma to the University of Warwick or any other university.

Titilayo Adunola Adebola

September 2017

Abstract

Article 27.3(b) of the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) obliges all World Trade Organisation (WTO) members to protect plant varieties. This thesis unpacks plant variety protection in the Global South, using Nigeria as a case study. To do this, the thesis adopts Third World Approaches to International Law (TWAIL) as a macro-methodological lens and regime complex theory as a supplement. TWAIL is a historically aware methodology that engages with international law from the perspectives and aspirations of the Third World. While regime complex theory illuminates how the overlapping non-hierarchical institutions, agreements, systems, and principles governing plant variety protection shape the implementation of Article 27.3(b) of TRIPS. Combining TWAIL with regime complex theory uncovers the complexities in plant variety protection law-making in the Global South with a view to provide lessons for Nigeria.

As Nigeria currently does not have a plant variety protection system, the thesis employs an original empirical study, involving semi-structured interviews in Nigeria, to understand realities and stakeholders' perspectives on the subject. Based on the empirical insights, the thesis proposes a *sui generis* system which protects the interests of both small-scale farmers and commercial breeders as best suited to Nigeria. To understand the intricacies and contingencies of designing such a system, the thesis examines plant variety protection laws and law-making of Global South WTO members such as the African Group, India, and Thailand. Drawing lessons from this examination, the thesis develops original frames for analysing plant variety protection in the Global South, namely: trade agreements, regional associations, pressures from seed companies, international institutions lobbies, and civil society activism. In combining the original multi-layered methodological lens, empirical study, and analytical framework, the thesis presents the first comprehensive analysis on plant variety protection in Nigeria. It is hoped that this timely thesis will inspire the introduction of the *sui generis* system proposed.

Abbreviations

ABN	African Biodiversity Network
ACB	African Centre for Biodiversity
ACP	African, Caribbean, and Pacific Group of States
ACTN	Advisory Committee on Trade Negotiations
ADPs	Agricultural Development Projects
AFAN	All Farmers Association of Nigeria
AFSA	Alliance for Food Sovereignty in Africa
AGOA	African Growth and Opportunities Act
AIKS	All India Kisan Sabha
AIPPI	International Association for the Protection of Industrial Property
ALFAAN	All Farmers Apex Association of Nigeria
AOP	Assembly of the Poor
APBREBES	Association of Plant Breeders for the Benefit of Society
APP	Agricultural Promotion Policy: 2016-2020
APSA	Asia and Pacific Seed Association
ARCN	Agricultural Research Council of Nigeria
ARIPO	African Regional Intellectual Property Organisation
ASAPIN	Association of Small Agro-Producers
ASSINSEL	International Association of Plant Breeders
ASTA	American Seed Trade Association
ATA	Agricultural Transformation Agenda
AU	African Union
BIOTHAI	Biodiversity Sustainable Agriculture Food Sovereignty Action Thailand
BIRPI	United International Bureaux for the Protection of Intellectual Property
CBD	Convention on Biological Diversity
CBD-COP	Convention of Biodiversity - Conference of the Parties
CCFs	Country Cooperation Frameworks
CEPA	Centre for Environmental Policy and Advocacy

CGAN	Cassava Growers Association of Nigeria
CGIAR	Consultative Group on International Agricultural Research Centres
CIOPORA	International Community of Breeders of Asexually Reproduced Ornamental and Fruit Varieties
CLT	Critical Legal Theory
COMESA	Common Market for Eastern and Southern Africa
CMAG	Commonwealth Ministerial Action Group
CPVO	Community Plant Variety Office
CPVR	Community Plant Variety Rights
CRAT	Center regional Africa de la technologie
CSO	Civil Society Organisation
CTA	Cassava Transformation Agenda
CTDT	Community Technology Development Trust
DBR	Department of Botanical Research
DOIP	Department of Intellectual Property
DUS	Distinctiveness, Uniformity, and Stability
EAC	East African Community
EC	European Community
ECOWAS	Economic Community of West African States
EDVs	Essentially Derived Varieties
EEPA	Ethiopian Environmental Protection Authority
EMCR	Environmental Management and Co-ordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources, and Benefit-Sharing) Regulations 2006
EPC	European Patent Convention 1973
EPO	European Patent Office
ESAFF	East and Southern Africa Farmers Forum
ESARIPO	Industrial Property Organisation for English-speaking Africa
EU	European Union
FACAN	Federation of Agricultural Commodity Associations of Nigeria
FAO	Food and Agriculture Organisation of the United Nations
FIS	International Federation of the Seed Trade

FOFAN	Federation of Farmers Association of Nigeria
FMARD	Federal Ministry of Agriculture and Rural Development
FME	Federal Ministry of Environment
FMITI	Federal Ministry of Industry, Trade, and Investment
FMJ	Federal Ministry of Justice
FMST	Federal Ministry of Science and Technology
FTA	Free Trade Agreement
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GeRRI	Genetic Resources Research Institute
GES	Growth Enhancement Scheme
GRAIN	Genetic Resources Action International Network
HCDA	Horticultural Crop Development Agency
HYVs	High Yielding Varieties
IBCR	Institute of Biodiversity Conservation and Research
ICAR	Indian Council for Agricultural Research
IFAD	International Fund for Agricultural Development
IFPRI	International Food Research Institute
IITA	International Institute of Tropical Agriculture, Nigeria
IMF	International Monetary Fund
INPI	French Intellectual Property Office
INR	Indian Rupee
IP	Intellectual Property
IPC	Industrial Property Commission
IPCOM	Intellectual Property Commission of Nigeria
IPGRI	International Plant Genetic Resources Institute
IPRs	Intellectual Property Rights
ISTA	International Seed Testing Association
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
KEPHIS	Kenya Plant Health Inspectorate Service
KIPI	Kenyan Industrial Property Institute

KRSS	Karnataka Rajya Ryota Sangha
MAN	Manufacturers Association of Nigeria
MENA	Middle East and Northern Africa
MOAC	Ministry of Agriculture and Cooperatives
MOALF	Ministry of Agriculture Livestock Fisheries
MOC	Ministry of Commerce
MSSRF	M S Swaminathan Research Foundation
NABDA	National Biotechnology Development Agency
NACGRAB	National Centre for Genetic Resources and Biotechnology
NAFSN	New Alliance for Food Security and Nutrition
NARIs	National Agricultural Research Institutes
NASA	National Agricultural Seed Act 1992
NASC	National Agriculture Seed Council
NCRI	National Cereals Research Institute
NCVLBA	National Crop Varieties and Livestock Breeds (Registration, etc.) Act 1987
NEEDS	National Economic Empowerment and Development Strategy
NESD	National Economic and Social Development
NESREA	National Environment Standards and Regulation Agency
NGN	Nigerian Naira
NIEO	New International Economic Order
NIPCOM	National Intellectual Property Commission
NOTAP	National Office for Technology Acquisition and Promotion
NPGR	National Plant Genetic Resources Centre
NSC	National Seeds Corporation
NSE	Nigerian Society of Engineers
NSQP	National Seed and Quarantine Project
NSP	National Seeds Project
NSS	National Seed Service
OAPI	African Intellectual Property Organisation
OAU/STRC	Organisation of African Unity's Scientific, Technical, and Research Commission

OECD	Organisation of Economic Cooperation and Development
PAIPO	Pan African Intellectual Property Organisation
PBAK	Plant Breeders Association of Kenya
PDA	Patents and Designs Act 1970
PFAN	Practising Farmers Association of Nigeria
PIL	Public Interest Litigation
PMAN	Performing Musicians Association of Nigeria
PPA	Plant Patent Act 1930
PPVFRA	Protection of Plant Varieties and Farmers' Rights Act 2001
PVPA	Plant Variety Protection Act 1970
R&D	Research and Development
RAFI	Rural Advancement Foundation International
RFSTE	Research Foundation for Science, Technology, and Ecology
ROPPA	Network of Professional Agricultural Producers of West Africa
SADC	Southern African Development Community
SADCC	Southern African Development Coordination Conference
SAI	Seed Association of India
SAP	Structural Adjustment Programme
SAT	Seed Association of Thailand
SAUs	State Agricultural Universities
SFCI	State Farm Corporation of India
SMTA	Standard Material Transfer Agreements
STAK	Seed Trade Association of Kenya
SVPA	Seeds and Plant Varieties Protection Act 2012
TABIO	Tanzania Alliance for Biodiversity
TCC	Transnational Capitalist Class
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
TWAIL	Third World Approaches to International Law
TWN	Third World Network
UK	United Kingdom
UN	United Nations

UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific, and Cultural Organisation
UPOV	International Union for the Protection of New Varieties of Plants
UPOV Convention	International Convention for the Protection of New Varieties of Plants
US	United States
USAID	US Agency for International Development
USD	US Dollar
USMEFAN	Union of Small and Medium-Scale Farmers of Nigeria
USPTO	US Patent and Trademark Office
USTR	US Trade Representative
VCU	Value for Cultivation and Use
WIPO	World Intellectual Property Organisation
WTO	World Trade Organisation
ZIMSOFF	Zimbabwe Small-Scale Organic Farmers Forum

Chapter 1

Introduction

This thesis analyses plant variety protection in the Global South, using Nigeria as a case study.¹ Plant variety protection in the Global South came to the fore following the entry into force of the World Trade Organisation (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) on 1 January 1995.² TRIPS is a comprehensive legally binding multilateral agreement that sets out minimum standards for the protection of intellectual property rights (IPRs). However, the obligation to protect plant varieties as set out in Article 27.3(b) of TRIPS is one of the most controversial issues between the Global North and Global South at the TRIPS Council.³ This is because of the differences in their farming practices, seed systems, and socioeconomic realities. The latitude in Article 27.3(b) of TRIPS as well as the existence of other legal systems and principles relevant to plant variety protection further exacerbates the controversies as seen below.

Article 27.3(b) of TRIPS obliges all WTO members to *inter alia* protect plant varieties using patents, an effective *sui generis* system, or a combination of systems.⁴ For WTO members that choose the patent option, TRIPS sets out

¹ The Global North-Global South divide is broadly considered a socio-economic and political divide. Although there are differences in sizes and state of economies, in this thesis, Global South (otherwise called 'Third World' or 'developing' countries) generally refers to less industrialised countries with interconnected histories of colonialism or marginalisation in the international economy, such as countries in Africa, parts of Asia, and Latin America. Global North (otherwise called 'the West' or 'developing' countries) refers to industrialised countries such as the United States (US), Western European countries, Canada, Japan, Australia, and New Zealand.

² Agreement on Trade-Related Aspects of Intellectual Property Rights (1994) Annex 1C, 33 ILM 81 <http://www.wto.org/english/docs_e/legal_e/27-trips.pdf> accessed 04 July 2017 (TRIPS).

³ See generally, World Trade Organisation (WTO), 'Current Issues in Intellectual Property' <https://www.wto.org/english/tratop_e/trips_e/trips_issues_e.htm> accessed 04 July 2017.

⁴ Article 27.3(b) of TRIPS states *inter alia*: 'Members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement.' Although the biological and legal conceptualisation of plant varieties differ, they both generally refer to a group of plants with certain common traits. 'Plant varieties' include both seeds and other propagating material. This thesis therefore uses the term 'plant varieties' and 'seeds' interchangeably.

minimum standards for designing a patent system.⁵ TRIPS also states that WTO members are required to comply with the pre-existing Paris Convention for the Protection of Industrial Property (Paris Convention).⁶ Reference to the Paris Convention demonstrates that where TRIPS intends for WTO members to apply provisions of another international treaty, such international treaty is expressly mentioned. This is important because for the *sui generis* option, TRIPS neither refers to the pre-existing international treaty for plant varieties, the International Convention for the Protection of New Varieties of Plants (UPOV Convention), nor sets out minimum standards for designing a *sui generis* system.⁷ In other words, although the UPOV plant breeder's rights system is a type of *sui generis* system for protecting plant varieties, TRIPS does not refer to it. Nevertheless, Global South WTO members increasingly tend to mimic the UPOV plant breeder's rights system or accede to the UPOV 1991 Convention.⁸

Civil society organisations (CSOs) such as the Genetic Resources Action International Network (GRAIN) and La Via Campesina, alongside academics such as Carlos Correa and Dwijen Rangnekar, explain that the UPOV Convention is unsuited to small-scale farming prevalent in the Global South for the reasons

⁵ TRIPS, arts 27-34.

⁶ Article 2 of TRIPS states: 'In respect of Parts II, III and IV of this Agreement [Patents are under Part II] Members shall comply with Articles 1 through 12, and Article 19, of the Paris Convention (1967). Nothing in Parts I to IV of this Agreement shall derogate from existing obligations that Members may have to each other under the Paris Convention, the Berne Convention, the Rome Convention and the Treaty on Intellectual Property in Respect of Integrated Circuits.'

⁷ International Convention for the Protection of New Varieties of Plants (1991) 815 UNTS 89 <<http://www.upov.int/en/publications/conventions/1991/act1991.htm>> accessed 04 July 2017 (UPOV Convention). UPOV is the French acronym for Union Internationale pour la Protection des Obtentions Vegetales. The UPOV Convention was first adopted in December 1961 and has been amended three times – in 1972, 1978, and 1991. The UPOV Convention establishes the International Union for the Protection of New Varieties of Plants (UPOV), which is an intergovernmental organisation with its headquarters in Geneva, Switzerland. For clarity, UPOV or UPOV Convention is used interchangeably in this thesis to refer to the international treaty or organisation.

⁸ Chapter 4 discusses the reasons why African countries are increasingly joining UPOV, thus providing insights to UPOV's expansion in the Global South. Examples of African UPOV members are Kenya, Morocco, Tanzania, and Tunisia. These African WTO members are party to the UPOV 1991 Convention: Kenya as of 11 May 2016, Morocco as of 8 October 2006, Tanzania as of 22 November 2015, and Tunisia as of 31 August 2003. UPOV, *Members of the International Union for the Protection of New Varieties of Plants: International Convention for the Protection of New Varieties of Plants UPOV Convention (1961), as revised at Geneva (1972, 1978 and 1991)* Status on 15 April 2016.

outlined below.⁹ First, the ‘distinct, uniform, and stable’ conditions for protection under the UPOV Convention marginalises small-scale farmers as their traditional farmers’ varieties do not fulfil these requirements.¹⁰ Second, the UPOV 1991 Convention gives member states the option to restrict farmers from saving, reusing, exchanging, and selling seeds of protected varieties.¹¹ Restricting access to seeds is detrimental to small-scale farming practices as over 70 per cent of farmers in the Global South are resource-poor farmers who may not have the finances to purchase new seeds every planting season.¹² Third, the UPOV plant breeder’s rights system expressly prohibits the incorporation of alternative legal principles.¹³ This means that the alternative legal principles in other international treaties relevant to plant variety protection, such as access and benefit sharing set out in the Convention on Biological Diversity (CBD), along with farmers’ rights set out in the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), cannot be incorporated in a UPOV plant breeder’s rights system.¹⁴

⁹ These actors explain that the UPOV 1991 Convention is suited to industrialised farming prevalent in the Global North. See generally, GAIA/GRAIN, ‘Ten reasons not to join UPOV: Global Trade and Biodiversity in Conflict’ (15 May 1998) 2 <<https://www.grain.org/article/entries/1-ten-reasons-not-to-join-upov>> accessed 04 July 2014; Dwijen Rangnekar, *Access to Genetic Resources, Gene-based Inventions and Agriculture* (Study paper 3a, United Kingdom Commission on Intellectual Property Rights 2002); La Via Campesina/GRAIN, ‘Seed Laws that Criminalise Farmers: Resistance and Fightback’ (8 April 2015) <<https://www.grain.org/article/entries/5142-seed-laws-that-criminalise-farmers-resistance-and-fightback>> accessed 04 July 2017; Carlos M Correa, ‘Plant Variety Protection in Developing Countries: A Tool for Designing a Sui Generis Plant Variety Protection System: An Alternative to UPOV 1991’ (APBREBES 2015). In this thesis, the term CSOs broadly refers to non-government organisations or institutions where people organise themselves to pursue shared interests. These include environmental groups, social movements, community-based organisations, and farmers’ organisations at the national, regional, or international levels.

¹⁰ UPOV 1991 Convention, arts 5-9.

¹¹ Article 15(2) of the UPOV 1991 Convention states: ‘... each Contracting Party may, within reasonable limits and subject to the safeguarding of the legitimate interests of the breeder, restrict the breeder's right in relation to any variety in order to permit farmers to use for propagating purposes, on their own holdings, the product of the harvest which they have obtained by planting, on their own holdings, the protected variety or a variety covered by Article 14(5)(a)(i) or Article 14(5)(a)(ii).’

¹² Karla D Maass Wolfenson, ‘Coping with the Food and Agriculture Challenge: Smallholders’ Agenda: Preparations and Outcomes of the 2012 United Nations Conference on Sustainable Development RIO+20’ (Food and Agriculture Organisation 2013) 22 <http://www.fao.org/fileadmin/templates/nr/sustainability_pathways/docs/Coping_with_food_and_agriculture_challenge__Smallholder_s_agenda_Final.pdf> accessed 04 July 2017.

¹³ UPOV 1991 Convention, art 5(2).

¹⁴ Convention on Biological Diversity (5 June 1992) 1760 UNTS 143, 31 ILM 818 <<http://www.cbd.int/doc/legal/cbd-en.pdf>> accessed 04 July 2017 (CBD); International Treaty on Plant Genetic Resources for Food and Agriculture (3 November 2001) Res 3/2003 FAO

In essence, although the obligation to protect plant varieties in the Global South arises from Article 27.3(b) of TRIPS which offers choice, Global South WTO members are increasingly abandoning this choice by acceding to the UPOV 1991 Convention. However, in addition to the options under TRIPS and UPOV, there are other international treaties relevant to plant variety protection, namely the CBD and the ITPGRFA. By adopting the Nigerian case study, this thesis seeks to understand and explain the problems and challenges, as well as effective ways to implement Article 27.3(b) of TRIPS in a Global South WTO member state.

Why Nigeria?

Nigeria is a pragmatic and opportune case study for this thesis. This is because it currently does not have a plant variety protection system despite being a signatory to TRIPS. As a ‘developing country’ WTO member, Nigeria had until 1 January 2000 to implement its TRIPS obligations – including the obligation to protect plant varieties.¹⁵ However, it has failed to meet this deadline. Similarly, Nigeria is a signatory to the CBD and the ITPGRFA, which set out legal principles that facilitate the design of *sui generis* systems in the Global South, yet it has not implemented these international obligations.¹⁶ The absence of a plant variety protection system in Nigeria is particularly interesting because Nigeria was one of the key interlocutors for the Global South during the TRIPS negotiations.¹⁷ Nigeria is also a member of the African Group that advocates for *sui generis* plant variety protection systems at the TRIPS Council.¹⁸ Yet, it appears that there is a sharp disconnect between its ‘Geneva rhetoric’ and its actions at the national level.¹⁹

Conference, 31st Session <<ftp://ftp.fao.org/docrep/fao/011/i0510e/i0510e.pdf>> accessed 04 July 2017 (ITPGRFA).

¹⁵ TRIPS, art 65. As a ‘developing country’ member of the WTO, Nigeria was entitled to a period of five years from the date TRIPS entered into force (1 January 1995) to fulfil its obligations.

¹⁶ However, Nigeria is yet to ratify the ITPGRFA as highlighted in Chapter 2.

¹⁷ See generally, Jayashree Watal and Antony Taubman (eds), *The Making of the TRIPS Agreements: Personal Insights from the Uruguay Round Negotiations* (WTO 2015).

¹⁸ See generally, WTO, ‘TRIPS: Issues, Article 27.3b, Traditional Knowledge, Biodiversity’ <https://www.wto.org/english/tratop_e/trips_e/art27_3b_e.htm> accessed 04 July 2017.

¹⁹ ‘Geneva rhetoric’ here refers to the countries’ communications or rhetoric at the TRIPS Council in Geneva. It borrows from Dwijen Rangnekar’s use of the phrase and uses it in the same way. See generally, Dwijen Rangnekar, ‘Geneva Rhetoric, National Reality: The Political Economy of

Apart from Nigeria's pending international obligations, its current agricultural policy and industrial property Bill also underscore the importance of introducing a plant variety protection system.²⁰ The current agricultural policy – Agriculture Promotion Policy: 2016-2020 (APP) – promotes a private sector-led agricultural market.²¹ Experiences of Global South countries such as Kenya reveal that private seed companies have pressured countries to introduce the UPOV plant breeder's rights system.²² Furthermore, the Industrial Property Commission (IPC) Bill 2016, which seeks to reform patent and trademark laws in Nigeria, also introduces plant variety protection provisions that are skewed in favour of plant breeder's rights.

Accordingly, the Nigerian case study provides rich insights into the implementation of Article 27.3(b) of TRIPS in the Global South. Drawing from lessons of other Global South WTO members, such as the African Group as well as India and Thailand, the thesis finds that introducing national plant variety protection systems is not simply a straightforward process. While determining the type of plant variety protection system suited to a country is challenging, actually translating that choice into law is even more so. As such, the thesis makes a case for analysing plant variety protection *laws*, as well as plant variety protection *law-making* in the Global South.

This chapter presents the background to the thesis. It is divided into six parts. Part I begins with the context of study, which covers the origins of the extension of IPRs to plant varieties. Part II sets out the research questions. Parts III and IV

Introducing Plant Breeders' Rights in Kenya' (2013) *New Political Economy* 1 ('Geneva Rhetoric, National Reality').

²⁰ Federal Ministry of Agriculture and Rural Development (FMARD), *The Agriculture Promotion Policy (2016-2020): Building on the Successes of the ATA, Closing Key Gaps* (Federal Ministry of Agriculture and Rural Development 2016)

<http://fmard.gov.ng/wp-content/uploads/2016/03/2016-Nigeria-Agric-Sector-Policy-Roadmap_June-15-2016_Final.pdf> accessed 17 July 2017 (*The Agriculture Promotion Policy*); 'A Bill for an Act to Provide for the Establishment of the Intellectual Property Commission of Nigeria, Repeal of Trademarks Act Cap. T13, LFN 2004 And Patents And Designs Act, Cap. P2, LFN 2004 and Make Comprehensive Provisions for the Registration and Protection of Trademarks, Patents and Designs, Plant Varieties, Animal Breeders and Farmers Rights and For Other Related Matters' (IPC Bill).

²¹ FMARD, *The Agriculture Promotion Policy (2016-2020)* (n 20).

²² This is discussed in Chapter 4. The term seed companies in this thesis refers to national and multinational seed companies as well as agribusinesses.

discuss methodology and methods employed in the thesis. Part V reveals the original contributions to literature the thesis makes, while Part VI delineates the structure of the thesis.

1.1. Context of Study

IPRs are legally enforceable rights granted by national authorities to protect a wide range of intangible assets.²³ The range of legal rights is broadly divided into three categories: industrial property, copyrights, and *sui generis* rights. Industrial property includes patents, trademarks, industrial designs, and geographical indications. Copyrights protect literary works, artistic works, and related creative works such as performances, broadcasts, and sound recordings. *Sui generis* rights comprise any type of special IPRs. Each of these forms of IPRs originated independently at different times and in different places.²⁴ This part traces the extension of IPRs to plant varieties at the national, international, and global phases. The goal here is not to provide a complete definitive history of the extension of IPRs to plant varieties. It is to unfold the trajectory of plant variety protection to show the role of actors, as well as its contested unsettled nature. The historical mapping of the contested unsettled nature of plant variety protection provides insights into the discussions and debates on the subject covered in the subsequent chapters of this thesis.

²³ World Intellectual Property Organisation (WIPO), *WIPO Intellectual Property Handbook* (WIPO Publication No 489 (E), 2nd edn, WIPO 2004) (*WIPO Intellectual Property Handbook*). Use of 'intellectual property' to refer to both industrial property and copyright started in the 1950s. See Arpad Bogisch, *Brief History of the First 25 Years of the World Intellectual Property Organization* (WIPO 1992) 8.

²⁴ See generally, Peter Drahos, *A Philosophy of Intellectual Property* (Dartmouth 1996) (*A Philosophy of Intellectual Property*); Brad Sherman and Lionel Bentley, *The Making of Modern Intellectual Property Law* (Cambridge University Press 1999); Ruth L Okediji, 'The International Relations of Intellectual Property: Narratives of Developing Country Participation in the Global Intellectual Property System' (2003) 7 *Singapore Journal of International and Comparative Law* 315; Christopher May and Susan K Sell, *Intellectual Property Rights: A Critical History* (Lynne Rienner Publishers 2006); Mario Biagoli, Peter Jaszi, and Martha Woodmansee (eds), *Making and Unmaking Intellectual Property: Creative Production in Legal and Cultural Perspectives* (The University of Chicago Press 2011).

1.1.1. National Origins

From the inception of IPRs systems in the United States (US) and Europe, patents were granted for inventions; however, the patentability of new plant varieties was questioned.²⁵ This is because plants are different from other mechanical inventions such as the phonograph or telephone; plants are living things. Extending patents – or any other IPRs system – to plant inventions raised a variety of questions. The questions raised included: (i) whether plant inventions were inventions or merely products of nature which evolved naturally; (ii) whether new plant varieties could fulfil requirements for patentability; and, ultimately, (iii) what type of IPRs system was appropriate to protect new plant varieties?²⁶

The product of nature question was one of the key legal objections to patenting new plant varieties in the US and Europe.²⁷ This objection was premised on the argument that plant varieties were non-inventions because they were products of nature and not the result of a creative process. Although the US Patent Act did not explicitly prohibit the patenting of plants, the US Patent and Trademark Office (USPTO) generally denied patents for plant inventions based on the ‘product of

²⁵ The first Italian patent was a three-year monopoly awarded in 1421 to Filippo Brunelleschi, an architect in Florence who created a crane system for shipping and transporting marble along the Arno River. The first official patent law – the Venetian Act – was enacted in 1474. One of the early English patents was a 20-year monopoly awarded in 1449 to John of Utynam, a Flemish glassmaker who invented a technique for producing stained glass. The first official English patent law was enacted in 1624, under the Statute of Monopolies, while the first US Patent Act was passed in 1790. The first US patent was awarded to Samuel Hopkins for a method of producing potassium carbonate (potash). See generally, Edward C Walterscheid, ‘The Early Evolution of the United States Patent Law: Antecedents (Part 1)’ (1994) 76 Journal of Patent and Trademark Office Society 697; Edward C Walterscheid, ‘The Early Evolution of the United States Patent Law: Antecedents (Part 2)’ (1994) 76 Journal of Patent and Trademark Office Society 849.

²⁶ Andre Heitz, ‘The History of the UPOV Convention and the Rationale for Plant Breeders’ Rights’, *Seminar on the Nature of and Rationale for the Protection of Plant Varieties under the UPOV Convention* (UPOV Publication No 697 (E) 1991) 25 (‘The History of the UPOV Convention and the Rationale for Plant Breeders’ Rights’); Glenn E Bugos and Daniel J Kevles, ‘Plants as Intellectual Property: American Practice, Law and Policy in World Context’ (1992) 7 *Osiris* (2nd series) 74, 80 (‘Plants as Intellectual Property’); Geertrui Van Overwalle, ‘Patent Protection for Plants: A Comparison of American and European Approaches’ (1999) 39 *IDEA Journal of Law and Technology* 143, 143-48 (‘Patent Protection for Plants’); Alain Pottage and Brad Sherman, ‘Organisms and Manufactures: On the History of Plant Inventions’ (2007) 31(2) *Melbourne University Law Review* 539, 539 (‘Organisms and Manufactures’).

²⁷ Van Overwalle, ‘Patent Protection for Plants’ (n 26) 148-49.

nature’ doctrine.²⁸ The principle is traceable to the *Ex Parte Latimer* case decided in 1889, where William Latimer’s patent application for a method of extracting fibre from the needle of an Australian pine (*pine australis*) was denied.²⁹ On appeal, the US Commissioner for Patents affirmed the patent examiner’s decision. The Commissioner held that the fibre was not patentable because it was neither the product of a new process of extraction nor a new product itself.³⁰ In other words, the fibre was not derived using a new process and it had been produced by the process of nature. While the *Ex Parte Latimer* case was not specifically about patenting new plant varieties, it established the landmark ‘product of nature’ doctrine which influenced the patent office decisions, judicial decisions, and debates on patenting plant varieties.³¹ Similarly, the ‘product of nature’ objection to patenting plant varieties gained traction within Europe.³² For example, while the German patent law did not explicitly prohibit the patenting of plant varieties, the German patent office generally denied patent applications for plant inventions by relying on the ‘product of nature’ doctrine.³³

On the patentability requirement question, one of the key issues raised was whether the full disclosure requirement for patent applications could be met. The full disclosure requirement is central to patents as it reflects the social contract concept underlying patent law. ‘Social contract’ stems from the premise that a patent is a contract between the society and inventors.³⁴ Inventors are granted a temporary monopoly on the invention through exclusive rights, in exchange for full disclosure

²⁸ Van Overwalle, ‘Patent Protection for Plants’ (n 26) 149; Pottage and Sherman, ‘Organisms and Manufactures’ (n 26) 551.

²⁹ *Ex Parte Latimer* (1889) 46 OG 1638, Decisions of the Commissioner of Patents 123-27 (*Ex Parte Latimer*).

³⁰ *ibid.*

³¹ K P McElrow, ‘Elements in Patent Law’ (1929) 21(6) *Industrial and Engineering Chemistry* 608, 608.

³² Van Overwalle, ‘Patent Protection for Plants’ (n 26) 149.

³³ Freda Wuesthoff, ‘Patenting of Plants’ (1956-1958) 1 *Industrial Property Quarterly* 12, 19 (‘Patenting of Plants’); Stephen A Bent, Richard L Schwaab, David G Colin, and Donald D Jeffery, *Intellectual Property Rights in Biotechnology Worldwide* (Stockton Press 1987) 43 (*Intellectual Property Rights in Biotechnology Worldwide*).

³⁴ Adam Mossof, ‘Rethinking the Development of Patents: An Intellectual History 1550-1800’ (2000-2001) 52 *Hastings Law Journal* 1255, 1257-58; Vincenzo Denicolo and Luigi Alberto Franzoni, ‘The Contract Theory of Patents’ (2004) 23(4) *International Review of Law and Economics* 365-80.

of the invention. The full disclosure enables any member of the society to reproduce and develop the invention upon the expiration of the patent. However, in the absence of full and enabling disclosure, the invention effectively remains outside the grasp of society. The traditional method of fulfilling the full disclosure requirements in the US and Europe was to provide written descriptions and drawings in the patent application.³⁵ Yet, it was difficult to accurately provide a full written description or drawing of the main distinguishing characteristics of new varieties such as the smell of a flower or the taste of a fruit. Furthermore, while providing a full written description of the invention was one issue, the ability to reproduce that invention following the written description was another issue. As plant inventions are subject to natural or non-human factors, the reproducibility of an invention based on a full written description could not be guaranteed.

Despite similar questions in the US and Europe about extending patents to plant varieties, these jurisdictions adopted different approaches to plant variety protection. The perception that patent laws were inappropriate for protecting plant varieties resulted in the initial establishment of *sui generis* systems in the US and Europe. However, as will be seen below, the divergence in both jurisdictions occurred when the US went on to extend patents to plant inventions through case law, while Europe explicitly prohibited patents for plant varieties under the European Patent Convention 1973 (EPC).

United States

The Plant Patent Act 1930 (PPA) was the first plant variety protection legislation in the world.³⁶ It grants protection for asexually reproduced plant varieties (i.e. plant varieties reproduced by grafts or cuttings, not seeds). However, the PPA excludes tuber propagated plants such as Irish potatoes and Jerusalem artichokes.

³⁵ Andrew Christie, 'Patents for Plant Innovation' (1989) 11 European Intellectual Property Review 394, 402 ('Patents for Plant Innovation').

³⁶ The US Congress passed this legislation as the Townsend-Purnell Plant Patent Act of 1930, and President Hoover signed it into law on 23 May 1930. It has been consolidated into Title 35 of the US Code as Sections 161 to 164 (consolidated on 19 July 1952, amended on 3 September 1954).

Tuber propagated crops were excluded because they were easily accessible; the part of the crop used for reproduction was the same part also sold as food.³⁷ Therefore, enforcement of the IPRs would have been difficult to achieve.³⁸ To address the ‘product of nature’ and ‘full disclosure’ oppositions to the extension of patents to plant varieties, the PPA established a special patent system by deviating from the standard requirements for patents. For example, rather than the ‘full disclosure’ requirement, the PPA provides for a written description of the plant that is as ‘complete as is reasonably possible.’³⁹

The success of the PPA is directly linked to actors in the nursery industry led by Paul Stark of Stark Brothers Nurseries.⁴⁰ Paul Stark was primarily concerned with protecting the Stark Brothers Nurseries’ business interests. Stark Brothers Nurseries was the largest US nursery in the early 20th century, but it did not carry out plant breeding.⁴¹ Instead, it purchased new desirable varieties from people who had discovered or bred new varieties and marketed the purchased varieties.⁴² In particular, Stark Brothers had marketed some of Luther Burbank’s – the renowned plant breeder – varieties. Luther Burbank discovered or improved over 800 varieties of trees, vegetables, fruits, and flowers.⁴³ When Burbank died in 1926, he passed on his ample collection of new varieties to Stark Brothers.⁴⁴ Thus, Stark Brothers had a wide collection of new un-marketed varieties which they sought to commodify through IPRs. In other words, the Stark Brothers’ motivation to lobby for the extension of IPRs to plant varieties was simply to commercialise the large collection of plant varieties they had inherited.

³⁷ Bugos and Kevles, ‘Plants as Intellectual Property’ (n 26) 83.

³⁸ Cary Fowler, ‘The Plant Patent Act of 1930: A Sociological History of Its Creation’ (2000) 82 *Journal of Patent and Trademark Office Society* 621, 634 (‘The Plant Patent Act of 1930’).

³⁹ Plant Patent Act 1930.

⁴⁰ Fowler, ‘The Plant Patent Act of 1930’ (n 38) 634.

⁴¹ *ibid* 628; Cary Fowler, *Unnatural Selection: Technology, Politics and Plant Evolution* (Gordon and Breach 1994) 79.

⁴² Fowler, ‘The Plant Patent Act of 1930’ (n 38) 629-30.

⁴³ Fowler, *Unnatural Selection* (n 41) 85.

⁴⁴ *ibid* 79.

During debates and lobbying for the PPA, the nursery industry led by Stark argued that plant breeders deserved IPRs just like other industrial inventors and authors.⁴⁵ Ironically, there was minimal scientific breeding for asexually reproduced crops.⁴⁶ In fact, the PPA excluded sexually reproduced plants which were at the centre of developments in scientific plant breeding.⁴⁷ The PPA only protected asexually reproduced plants, which were still products of traditional breeding practices.⁴⁸ Paul Stark and the nursery industry had persuaded the seed companies, who were also initially involved in pushing for the extension of IPRs, to stop lobbying for the protection of sexually reproduced plants.⁴⁹ The plan was to gently introduce IPRs for plant varieties starting with asexually reproduced plants, then to push for the extension of IPRs to sexually reproduced plants afterwards.⁵⁰ The rationale for focusing on asexually reproduced plants was to prevent criticism about IPRs leading to monopolies on staple food crops in the US Congress.⁵¹

Indeed, the Plant Variety Protection Act 1970 (PVPA) – which provides *sui generis* rights for sexually reproduced and tuber propagated plant varieties – is evidence that the Stark Brothers and the nursery industry’s plan worked.⁵² Apart from the PPA which pioneered plant variety protection in the US, a series of events both in the US and Europe triggered the passing of the PVPA. First, UPOV was established in Europe in 1961 to protect plant varieties. This plant breeder’s rights system covering both asexually and sexually reproduced plants revived discussions about plant variety protection for sexually propagated plant varieties in the US.⁵³ Second, significant developments in plant breeding research in the US inspired calls to

⁴⁵ Pottage and Sherman, ‘Organisms and Manufactures’ (n 26) 554.

⁴⁶ *ibid.*

⁴⁷ *ibid.*

⁴⁸ *ibid.*

⁴⁹ Graham Dutfield, *Intellectual Property Rights and the Life Sciences Industries: A Twentieth Century History* (Ashgate 2003) 181.

⁵⁰ *ibid.*

⁵¹ Asexually reproduced plant varieties include flowering plants, fruit trees, and vines, while sexually reproduced plant varieties include staples such as corn and wheat.

⁵² Plant Variety Protection Act 1970, 7 USC, ss 2321-582 (PVPA).

⁵³ The US did not become a party to UPOV until 8 November 1981. Fowler, *Unnatural Selection* (n 41) 108-09; Mark Janis and Jay Kesan, ‘US Plant Variety Protection: Sound and Fury?’ (1994) *Articles by Maurer Faculty Paper* 430, 727 and 734-44.

protect sexually propagated plants.⁵⁴ In particular, the American Seed Trade Association (ASTA) was actively involved in promoting the PVPA.⁵⁵ John Sutherland, a high ranking official of ASTA, and Louis Robertson, a Chicago attorney employed by ASTA, both drafted the PVPA.⁵⁶ Inspiration for the PVPA Bill was drawn from the PPA and the UPOV 1961 Convention. Cary Fowler graphically notes that John Sutherland sat with a copy of the PPA, pulling out sections to create a draft legislation.⁵⁷

However, the IPRs architecture for plant varieties in the US changed remarkably in 1980, with the US Supreme Court's seminal decision in *Diamond v Chakrabarty*.⁵⁸ The Supreme Court held that living organisms could be protected under the US patent law.⁵⁹ Ananda Chakrabarty, a microbiologist with General Electric, invented a bacterium capable of breaking down multiple components of crude oil.⁶⁰ Rejecting the 'product of nature' objection to patenting raised by the patent examiner, the Supreme Court held that the live human-made microorganisms constitute patentable subject matter.⁶¹ Further case law, such as *Ex Parte Hibberd* and *J E M Ag Supply v Pioneer Hi-Bred*, confirmed the patentability of plant varieties in the US.⁶²

⁵⁴ Bugos and Kevles, 'Plants as Intellectual Property' (n 26) 92-93; Nicholas Seay, 'Intellectual Property Rights in Plants' in Stephen Baenziger, Roger A Kleese, and Robert F Barnes (eds), *Intellectual Property Rights: Protection of Plant Materials* (Special Publication No 21, Crop Science Society of America 1993) 64.

⁵⁵ Jack Kloppenburg, *First the Seed: The Political Economy of Plant Biotechnology 1492-2000* (2nd edn, University of Wisconsin Press 2004) 139.

⁵⁶ Fowler, *Unnatural Selection* (n 41) 108-09.

⁵⁷ *ibid.*

⁵⁸ *Sidney A Diamond, Commissioner of Patents and Trademarks v Ananda M Chakrabarty et al* (1980) 447 US 303 (*Diamond v Chakrabarty*).

⁵⁹ *ibid.*

⁶⁰ *ibid.*

⁶¹ *ibid.*

⁶² *Ex Parte Hibberd et al* (1985) 227 USPQ 443; *JEM AG Supply Inc, DBA Farm Advantage Inc et al v Pioneer Hi-bred International Inc* (2001) 534 US 124. For a discussion on these cases, see Anne E Crocker, 'Will Plants Finally Grow into Full Patent Protection on an International Level? A Look at the History of the US and International Patent Law Regarding Patent Protection for Plants and the Likely Changes After the US Supreme Court's Decision in J.E.M. AG Supply v Pioneer Hi-Bred' (2003) 8 Drake Journal of Agricultural Law 251.

Europe

Like their American counterparts, the European seed companies were also eager to extend IPRs to plant varieties.⁶³ However, there were variations in the plant variety protection systems within Europe. Britain and Denmark prohibited patents for plant varieties,⁶⁴ Italy and France allowed patents for plant varieties from 1948 and 1949,⁶⁵ while the Netherlands, Austria, and Germany enacted *sui generis* IPRs systems for plant varieties in 1942, 1946, and 1953, respectively.⁶⁶ The post-World War II efforts to enhance integration of European communities inspired the calls to harmonise IPRs legislations in Europe. However, as in the US, deciding on the appropriate form of IPRs protection for plant varieties to be adopted in Europe engendered debates. Two groups of actors were at the forefront of the debates on the harmonised IPRs system for plant varieties in Europe. These were the International Association for the Protection of Industrial Property (AIPPI) and the International Association of Plant Breeders (ASSINSEL); that is, a group of patent lawyers and a group of plant breeders. While both groups agreed that plant varieties ought to be protected, the concern remained that of determining the appropriate type of IPRs system for plant varieties.

The German delegation in AIPPI – Franz and Freda Wuesthoff – advocated for a dual system of protection which provided for both patents and *sui generis* systems.⁶⁷ The Wuesthoffs proposed patent systems for ‘major breakthroughs’ and *sui generis* systems for ‘ordinary new varieties.’⁶⁸ However, AIPPI rejected the German proposal at its 1952 Vienna and 1954 Brussels meetings. In particular,

⁶³ Bugos and Kevles, ‘Plants as Intellectual Property’ (n 26) 90.

⁶⁴ *ibid*; Dutfield, *Intellectual Property Rights and the Life Sciences Industries* (n 49) 184.

⁶⁵ Bugos and Kevles, ‘Plants as Intellectual Property’ (n 26) 90; Dutfield, *Intellectual Property Rights and the Life Sciences Industries* (n 49) 184.

⁶⁶ Van Overwalle, ‘Patent Protection for Plants’ (n 26) 161.

⁶⁷ Franz Wuesthoff and Freda Wuesthoff, ‘Protection of New Varieties of Cultivated Plants’ (Report in the name of the German Group, Vienna Congress 1952 of the International Association for the Protection of Industrial Property) reproduced in Bent and others, *Intellectual Property Rights in Biotechnology Worldwide* (n 33) 83-97. For more on the Wuesthoffs’ position on patenting plant varieties, see Freda Wuesthoff, ‘Patenting of Plants’ (n 33) 12; F Wuesthoff, ‘Cultivated Plant Nomenclature and Plant Variety Rights’ (1973) 22(4) *Taxon* 455.

⁶⁸ *ibid*.

AIPPI members argued that protecting living products alongside industrial products would confuse established patent legislations.⁶⁹

Meanwhile, ASSINSEL had initially favoured patent systems as the main option for protecting plant varieties.⁷⁰ In fact, ASSINSEL contributed to the inclusion of patent variety protection debates in the 1952 AIPPI Congress highlighted above.⁷¹ However, Andre Heitz notes that following the opposition to patents for plant varieties at AIPPI, ASSINSEL members began to rethink their position on patenting plant varieties.⁷² Thus, at its 1956 Congress held in Semmering, Austria, ASSINSEL called for the organisation of an international conference to consider the appropriate plant variety protection system for Europe and to set out the principles to govern such system.⁷³ ASSINSEL requested the French government to organise the international conference, later known as the International Conference for the Protection of New Varieties.⁷⁴ This International Conference, which was held from 7 to 11 May 1957, became the first session of the International (Diplomatic) Conference for the Protection of New Varieties of Plants, which established the principles of plant breeder's rights that was incorporated in the UPOV Convention.⁷⁵

Alongside the AIPPI and ASSINSEL debates on plant variety protection, the proposed post-World War II move towards European integration resulted in two agreements relevant to plant variety protection in Europe. These two agreements,

⁶⁹ Bugos and Kevles, 'Plants as Intellectual Property' (n 26) 90.

⁷⁰ ASSINSEL had favoured patent systems from the 1940s to the 1950s. Dwijen Rangnekar, 'Intellectual Property Rights and Agriculture: An Analysis of the Economic Impact of Plant Breeders Rights' (ActionAid UK 2000) 10
<https://www.actionaid.org.uk/sites/default/files/content_document/ipr.pdf> accessed 21 July 2017.

⁷¹ Bent and others, *Intellectual Property Rights in Biotechnology Worldwide* (n 33) 51.

⁷² Andre Heitz, 'The History of Plant Variety Protection' in *The First Twenty-Five Years of the International Convention for the Protection of New Varieties of Plants 2 December 1961-2 December 1986* (UPOV Publication No. 879 (E) 1987) 82 ('The History of Plant Variety Protection').

⁷³ *ibid.*

⁷⁴ Heitz notes that ASSINSEL approached France to organise the Conference because it knew in advance that the request would be accepted. Heitz, 'The History of Plant Variety Protection' (n 72) 82.

⁷⁵ Heitz, 'The History of Plant Variety Protection' (n 72) 82. UPOV is discussed in the next section.

the Strasbourg Convention for the Unification of Certain Points of Substantive Law on Patents for Inventions 1963 (Strasbourg Convention) and the EPC, established the European position on patenting plant varieties. The Strasbourg Convention gives member states the option of prohibiting patents for plant varieties. Article 2 of the Strasbourg Convention provides that:

The Contracting States *shall not be bound to provide for the grant of patents* in respect of ... plant or animal varieties or essentially biological processes for the production of plants or animals...⁷⁶

The optional prohibition of patents for plant varieties introduced under the Strasbourg Convention became a mandatory legal principle under the EPC. The EPC, adopted in 1973, provides the legal framework for granting European patents. Rather than leaving it to the discretion of member states as was the case under the Strasbourg Convention, the EPC expressly prohibits patents for plant varieties. Article 53(b) of the EPC provides that:

European patents shall not be granted in respect of plant or animal varieties or essentially biological processes for the production of plants or animals...⁷⁷

To close this discussion, the seed industry – through its association ASSINSEL – was active in pushing for plant variety protection systems in European countries just like its counterpart in the US. However, unlike in the US, the European patent attorneys and the IPRs association AIPPI were also actively involved in shaping the IPRs systems for plant varieties in Europe. While there were initially variations in the IPRs systems for plant varieties in Europe, by the late 1950s, AIPPI favoured a *sui generis* system for plant varieties and not patents. Thanks to the move towards the integration of European economies, the Strasbourg Convention and the EPC which governed patents for inventions in Europe prohibited the patenting of plant

⁷⁶ Emphasis added.

⁷⁷ Emphasis added.

varieties. The preference for a *sui generis* plant variety protection system culminated in UPOV. The establishment of UPOV precipitated international contestations about plant variety protection, as will be seen below.

1.1.2. International Contestations

International contestations about plant variety protection came to the fore in the 1970s, following the extension of IPRs to plant varieties through legislative and judicial processes in the US and Europe, as seen above. However, with the gradual extension of UPOV outside Europe, the international contestations were generally couched as North-South debates.⁷⁸

International Convention for the Protection of New Varieties of Plants

As highlighted in the preceding section, ASSINSEL's call for an international conference to consider the appropriate plant variety protection system for Europe culminated in the establishment of UPOV.⁷⁹ While harmonisation of European plant variety protection systems was one reason for the establishment of UPOV, a second reason was the European plant breeders and the seed industry's desire to increase seed trade within and outside of Europe.⁸⁰ Plant breeders and the seed industry organised under ASSINSEL concluded that an international agreement was required for the effective international protection of new plant varieties.⁸¹ A third reason was that European seed companies had also started to propagate new plant varieties outside Europe – such as in Africa – to take advantage of the sunny and dry weather conditions as well as cheap labour.⁸² Therefore, these companies desired international protection for new plant varieties to control access and use of the varieties. UPOV provided the desired international system of protection.

⁷⁸ This is discussed under the International Undertaking and Convention on Biological Diversity below.

⁷⁹ See 1.1.1 above.

⁸⁰ Robin Pistorius and Jeroen van Wijk, *The Exploitation of Plant Information: Political Strategies in Crop Development* (CABI Publishing 1999) 80-81 (*The Exploitation of Plant Information*).

⁸¹ *ibid* 80-81.

⁸² *ibid* 81.

UPOV was established after two sessions of the International Diplomatic Conferences – in 1957 and 1961, respectively. Austria, Belgium, Germany, Italy, the Netherlands, and Sweden actively participated in the 1957 international conference, while Denmark, Norway, and Switzerland had observer status.⁸³ Representatives of the United International Bureaux for the Protection of Intellectual Property (BIRPI) as well as the Food and Agriculture Organisation of the United Nations (FAO) were also observers.⁸⁴ In addition to the above-mentioned European countries and international organisations that attended the first Conference, the United Kingdom (UK), Finland, ASSINSEL, AIPPI, the Organisation of Economic Cooperation and Development (OECD), the International Community of Breeders of Asexually Reproduced Ornamental and Fruit Varieties (CIOPORA), and International Federation of the Seed Trade (FIS) also participated in the second Conference which took place from 21 November to 2 December 1961.⁸⁵ The participants in the two conferences reflects the European origins and dominance in UPOV.

The UPOV Convention was adopted in Paris in 1961. It entered into force in 1968 after three countries – the UK, Germany, and the Netherlands – ratified it.⁸⁶ The UPOV 1961 Convention has been revised three times since it entered into force.⁸⁷ It had a minor revision on 10 November 1972, and two substantial revisions on 23 October 1978 and 19 March 1991, respectively.⁸⁸ Each of the UPOV Convention revisions progressively strengthened its plant breeder's rights system.⁸⁹ However, as will be seen next, the extension of IPRs to plant varieties raised a variety of concerns from activists and CSOs from both the Global North and Global South.

⁸³ Heitz, 'The History of Plant Variety Protection' (n 72) 82-84.

⁸⁴ BIRPI is the predecessor of the WIPO.

⁸⁵ Heitz, 'The History of Plant Variety Protection' (n 72) 82-84.

⁸⁶ The UK ratified the UPOV Convention on 17 September 1965, the Netherlands on 8 August 1967, and Germany on 11 July 1968. The UPOV Convention entered into force on 10 August 1968.

⁸⁷ International Union for the Protection of New Varieties of Plants, UPOV Lex <http://www.upov.int/upovlex/en/upov_convention.html> accessed 28 October 2016.

⁸⁸ *ibid.*

⁸⁹ The UPOV plant breeder's rights system is discussed in detail in Chapter 3.

Concerns about the extension of IPRs to plant varieties were first raised in the mid-1970s by individuals such as American activist Cary Fowler and Canadian activist Pat Mooney.⁹⁰ Fowler and Mooney, along with Hope Shand, established the CSO Rural Advancement Foundation International (RAFI), which was dedicated solely to plant genetic resources issues.⁹¹ Fowler, Mooney, and Shand along with RAFI and other CSOs such as GRAIN and the Community Technology Development Trust (CTDT) were instrumental in raising awareness about the implications of the extension of IPRs to plant varieties.⁹² These implications include the following: (i) free access to plant genetic resources without adequate benefits returning to the countries where the genetic resources were sourced from; (ii) restriction of the farming practices of small-scale farmers such as saving, reusing, exchanging, and selling seeds; and (iii) protection only of varieties that meet certain ‘distinct’, ‘uniform’, and ‘stable’ conditions which only seed companies fulfil, thus marginalising small-scale farmers’ varieties.⁹³

Raising awareness about these concerns changed the plant variety protection debates. As mentioned in the discussions on national origins above, the debates about plant variety protection in the US and Europe mainly revolved around ‘whether to protect plant varieties using patents or *sui generis* systems.’ The concerns Fowler and Mooney raised shifted the discussion on plant variety protection from its focus on choice of the patent or *sui generis* option to more nuanced debates about the implications of the plant variety protection on two

⁹⁰ Mooney recalls that ‘only Cary and I wanted to talk about seeds’ in the mid-1970s. Patrick Mooney, ‘International Non-governmental Organizations: The Hundred Year (or so) Seed War – Seeds, Sovereignty and Civil Society – A Historical Perspective on the Evolution of “The Law of the Seed”’ in Christine Frison, Francisco Lopez, and Jose T Esquinas-Alcazar (eds), *Plant Genetic Resources and Food Security: Stakeholder Perspectives on the International Treaty on Plant Genetic Resources for Food and Agriculture* (Earthscan 2011) 136 (‘International Non-governmental Organizations’).

⁹¹ Mooney, ‘International Non-governmental Organizations’ (n 90) 140.

⁹² See generally, *ibid*; Cary Fowler and Pat Mooney, *Shattering: Food, Politics and the Loss of Genetic Diversity* (The University of Arizona Press 1990); Hope Shand, ‘There is a Conflict between Intellectual Property Rights and the Rights of Farmers in Developing Countries’ (1991) *Journal of Agricultural and Environmental Ethics* 131-140.

⁹³ These ‘distinct’, ‘uniform’ and ‘stable’ conditions are discussed in detail in Chapter 3.

marginalised groups: small-scale farmers and the Global South. The activists and CSOs chose the United Nations (UN) as the appropriate international forum to lobby for international agreements that addressed the concerns raised above.⁹⁴ UPOV was not deemed appropriate because of its European dominance. In addition, the UN was chosen because the Global South countries could their use numeric majority to effect desired changes.⁹⁵

Robin Pistorius and Jeroen van Wijk note that the concerns about the implications of plant variety protection in the Global South aligned with the struggle for a New International Economic Order (NIEO) that was adopted as a UN policy in 1974.⁹⁶ The NIEO was an attempt by the Global South to redistribute global wealth.⁹⁷ In applying this redistribution aspiration to plant variety protection, the Global South – led by countries like Mexico, with support from activists and CSOs such as Mooney, Fowler, Shand, RAFI, and GRAIN – pushed for the two international agreements in the UN that addressed concerns about the farming practices of small-scale farmers and control over plant genetic resources in the Global South.⁹⁸ At the 1983 FAO Conference of the UN, Global South countries succeeded in establishing the International Undertaking on Plant Genetic Resources (International Undertaking).

The International Undertaking is a non-binding agreement that provides for the conservation and control of plant genetic resources.⁹⁹ It states that ‘plant genetic resources are a heritage of mankind and consequently should be available without

⁹⁴ Pistorius and Wijk, *The Exploitation of Plant Information* (n 80) 10.

⁹⁵ *ibid.*

⁹⁶ *ibid.*

⁹⁷ Susan K Sell, *Power and Ideas: North-South Politics of Intellectual Property and Antitrust* (State University of New York Press 1998) 27-32; Ruth Okediji, ‘History Lessons for the WIPO Development Agenda’ in Neil Weinstock Netanel (ed), *The Development Agenda: Global Intellectual Property and Developing Countries* (Oxford University Press 2008) 148-152.

⁹⁸ Laurence R Helfer, ‘Regime Shifting: The TRIPS Agreement and New Dynamics of International Intellectual Property Law making’ (2004) 29 *Yale Journal of International Law* 1, 35 (‘Regime Shifting’).

⁹⁹ International Undertaking on Plant Genetic Resources (23 November 1983) FAO Resolution 8/83 (International Undertaking). A binding treaty on plant genetic resources – the ITPGRFA was subsequently negotiated at the FAO from 1994 to 2001. As the ITPGRFA was adopted in 2001, which is post-TRIPS, this section focuses on the International Undertaking. The relevant provisions of the ITPGRFA are discussed in detail in Chapter 3.

restrictions.’¹⁰⁰ The Global North rejected the International Undertaking because it covered all plant genetic resources – including new plant varieties protected under IPRs systems such as the UPOV plant breeder’s rights system.¹⁰¹ In particular, Denmark, Finland, France, New Zealand, Norway, Sweden, the UK, and the US officially indicated unwillingness to support the International Undertaking because it was contrary to the economic interests of their seed companies.¹⁰² As a result, the Global North continued to freely access genetic resources from the Global South and protect new plant varieties developed from those genetic resources, while the Global South received no compensation.¹⁰³

Global South attempts to find a balance between the International Undertaking and plant variety protection culminated in three interpretations of the International Undertaking between 1989 and 1991. These Resolutions – 4/89, 5/89, and 3/91 – were adopted as FAO Conference Resolutions and annexed to the International Undertaking. In particular, Resolution 4/89 in 1989 expressly stated that UPOV plant breeders’ rights were not incompatible with the International Undertaking.¹⁰⁴ Furthermore, the three Resolutions introduced ‘farmers’ rights’, a loosely defined concept that seeks to recognise and reward small-scale farmers’ contributions to the conservation and improvement of plant genetic resources.¹⁰⁵ Regine Andersen points out that after Resolution 3/91, FAO members concluded that the conditions for access to plant genetic resources under the International Undertaking required further clarifications.¹⁰⁶ This was because the different FAO Resolutions had

¹⁰⁰ International Undertaking, art 1.

¹⁰¹ Regine Andersen, ‘Historical Context: Evolving International Cooperation on Crop Genetic Resources’ in Michael Halewood (ed), *Farmers’ Crop Varieties and Farmers’ Rights: Challenges in Taxonomy and Law* (Earthscan 2016) 101-03 (‘Historical Context’).

¹⁰² Susan Bragdon, Kathryn Garforth, and John E Haapala Jr, ‘Safeguarding Biodiversity: The Convention on Biological Diversity’ in Geoff Tansey and Tasmin Rajotte (eds), *The Future Control of Food: A Guide to International Negotiations and Rules on Intellectual Property Biodiversity and Food Security* (Earthscan 2008) 84 (‘Safeguarding Biodiversity’).

¹⁰³ GRAIN, ‘International Undertaking on Plant Genetic Resources: The Final Stretch’ (GRAIN Reports 2001) <<https://www.grain.org/article/entries/90-international-undertaking-on-plant-genetic-resources-the-final-stretch>> accessed 25 July 2017.

¹⁰⁴ Resolution 4/89 of the International Undertaking states: “plant breeders” rights as provided under UPOV (International Union for the Protection of New Varieties of Plants) are not incompatible with the International Undertaking.’

¹⁰⁵ Resolution 4/89 (29 November 1989); Resolution 5/89 (29 November 1989); Resolution 3/91 (25 November 1991). The concept of farmers’ rights is discussed in detail in Chapter 3.

¹⁰⁶ Andersen, ‘Historical Context’ (n 101) 108.

expanded on the interpretation of the International Undertaking, making its provisions unclear. Clarifications on access to genetic resources were achieved under the CBD. Notably, the Global South secured the provisions on access to genetic resources and compensations from the use of these resources – access and benefit sharing – which they were unable to achieve in other fora such as the FAO or UPOV.¹⁰⁷

During the CBD negotiations – from May 1989 to June 1992 – the Global North and Global South were divided on proposed provisions regarding access to genetic resources.¹⁰⁸ The Global North desired free access to plant genetic resources from the Global South to develop new plant varieties.¹⁰⁹ However, the Global South, led by the ‘Group of 77 developing countries’ with support from CSOs such as the World Wildlife Fund (WWF), argued that countries where genetic resource are sourced from ought to be compensated.¹¹⁰ In line with the Global South’s demands, the CBD, which was adopted in 1992, provides that countries have sovereign rights over all biological materials – including plants, animals, and microorganisms – originating in their territory. This established the access and benefit sharing principle.¹¹¹

Without doubt, the international contestations expanded the scope of plant variety protection. Moving beyond patents and plant breeder’s rights as the main forms of IPRs systems for protecting plant varieties, the negotiations in the UN resulting in farmers’ rights as well as access and benefit sharing principles provide alternative ways to rethink national plant variety protection systems. What is clear from the international contestations is that the appropriate type of IPRs system for plant varieties is far from settled. This is reflected in TRIPS as will be seen below.

¹⁰⁷ Bragdon, Garforth, and Haapala Jr, ‘Safeguarding Biodiversity’ (n 102) 84.

¹⁰⁸ The CBD negotiations were conducted under the aegis of the United Nations Environment Programme (UNEP). Convention on Biological Diversity, ‘History of the Convention’ <<https://www.cbd.int/history/>> accessed 05 July 2017.

¹⁰⁹ Bragdon, Garforth, and Haapala Jr, ‘Safeguarding Biodiversity’ (n 102) 83-84.

¹¹⁰ Veit Koester, ‘The Biodiversity Convention Negotiation Process and Some Comments on the Outcome’ (1997) 27(3) Environmental Policy and Law 175, 183.

¹¹¹ Access and benefit sharing is discussed in detail in Chapter 3.

1.1.3. Global Minimum Standard: TRIPS

TRIPS introduced global minimum standards for IPRs, including plant varieties.¹¹² Article 27.3(b) of TRIPS expressly obliges WTO members to protect plant varieties using patents, *sui generis* systems, or any combination of systems.¹¹³ This apparent latitude in TRIPS reflects the lack of consensus on plant variety protection, particularly in the Global North. As stated earlier, the US allowed patents for plant varieties following the *Diamond v Chakrabarty* case. Meanwhile, Europe had established a harmonised UPOV plant breeder's rights system in 1961, whereas the Global South had secured farmers' rights as well as access and benefit sharing principles under the International Undertaking of the FAO and the CBD, respectively.

Thus, during the TRIPS negotiations for plant variety protection, the US proposed patents for plant varieties, which the European Community (EC; now European Union (EU)) and the Global South countries rejected.¹¹⁴ The EU favoured a UPOV plant breeder's rights system as its *sui generis* system.¹¹⁵ On the other hand, the Global South countries, led by 'Group of Ten' countries including Brazil, India, and Nigeria, favoured a *sui generis* system that incorporates farmers' rights as well as access and benefit sharing principles.¹¹⁶ Significantly, these divergences reflect not only the North-South contestations on plant variety protection, it also reflects the divergences within the North, particularly between the US and EU on the appropriate plant variety protection system.¹¹⁷ Dwijen Rangnekar refers to the

¹¹² John Braithwaite and Peter Drahos, *Global Business Regulation* (Cambridge University Press 2000) 63 (*Global Business Regulation*).

¹¹³ See the introduction to thesis above.

¹¹⁴ International Centre for Trade and Sustainable Development, *UNCTAD-ICTSD Project on IPRs and Sustainable Development: Resource Book on TRIPS and Development* (Cambridge University Press 2005) 388-395.

¹¹⁵ *ibid* 394.

¹¹⁶ Watal explains that trade negotiators from ten Global South countries – Argentina, Brazil, Cuba, Egypt, India, Nicaragua, Nigeria, Peru, Tanzania, and Yugoslavia were actively involved in the Uruguay Round. Jayashree Watal, *Intellectual Property Rights in the WTO and Developing Countries* (Oxford University Press 2001) 19-20 (*Intellectual Property Rights in the WTO and Developing Countries*).

¹¹⁷ A number of commentators who participated in the TRIPS drafting process have provided detailed analysis of the negotiating process, such as Thomas Cottier, 'The Prospects for Intellectual Property in GATT' (1991) 28 *Common Market Law Review* 383; Jorg Reinbothe and Anthony

Global North divergences on the appropriate plant variety protection system as a ‘rare case of intra-Quad dissonance.’¹¹⁸ In other words, while the US, EU, Canada, and Japan (Quad) generally agreed or settled on the substance of other IPRs provisions in TRIPS, plant variety protection was one of the rare provisions that the Quad was unable to agree on.

The final text of Article 27.3(b) of TRIPS, which contains the options of a patent system favoured by the US, *sui generis* system favoured by the EU, or a combination of systems, reflects the delicate compromise reached between the US and the EU. Nonetheless, TRIPS provides for a review of Article 27.3(b) within four years from the entry into force of TRIPS – that is, in 1999.¹¹⁹ This proposed review is still pending.¹²⁰ Notably, there is also another on-going treaty negotiation on IPRs and genetic resources at the World Intellectual Property Organisation (WIPO).¹²¹ The adoption of this WIPO treaty would further expand the plant variety protection landscape.

This part introduced the contested nature of plant variety protection. Second, it drew attention to the role of actors in plant variety protection law-making. With the national origins, the role of seed and nursery industries in the extension of IPRs to plant varieties was highlighted. The international contestations demonstrated the role of activists and CSOs in generating counter-narratives to dominant

Howard, ‘The State of Play in the Negotiations on TRIPS (GATT/Uruguay Round)’ (1991) 5 European Intellectual Property Review 157; Terence Stewart, ‘The GATT Uruguay Round – A Negotiating History 1986-1992’ (1993) II Commentary 2245; Gail Evans, ‘Intellectual Property as a Trade Issue: The Making of the Agreement on Trade-Related Aspects of Intellectual Property Rights’ (1994) 18 World Competition: Law and Economics Review 137; Anna-Maria Pacon, ‘What will TRIPS do for the Developing Countries’ in Friedrich-Karl Beier and Gerhard Schricker (eds), *From GATT to TRIPS – The Agreement on Trade-Related Aspects of Intellectual Property Rights* (Max Planck Institute for Foreign and International Patent, Copyright, and Competition Law 1996) 3229; Daniel Gervais, *The TRIPS Agreement: Drafting History and Analysis* (Sweet and Maxwell 1998); Watal, *Intellectual Property Rights in the WTO and Developing Countries* (n 116); Carlos Correa and Abdulqawi Yusuf (eds), *Intellectual Property and International Trade: The TRIPS Agreement* (2nd edn, Kluwer Law International 2008).

¹¹⁸ Rangnekar, ‘Geneva Rhetoric, National Reality’ (n 19) 5.

¹¹⁹ Article 27.3(b) of TRIPS provides: ‘...The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement.’

¹²⁰ Chapter 3 discusses the proposed review of Article 27.3(b) of TRIPS.

¹²¹ WIPO, ‘Intergovernmental Committee’ <<http://www.wipo.int/tk/en/igc/>> accessed 26 July 2017.

conceptions of plant variety protection by introducing farmers' rights as well as access and benefit sharing principles. The global minimum standards also reveal the extension of plant variety protection, from its origins in the US and Europe to a global treaty. This extension of IPRs for plant varieties to the global level reflects Boaventura de Sousa Santos' thesis that 'globalisation is always the successful globalisation of a given localism.'¹²² That is, the US and Europe globalised their IPRs system for plant varieties through the TRIPS, imposing minimum plant variety protection standards on Global South countries like Nigeria.

The above historical analysis of plant variety protection can be summarised thus: the origins of plant variety protection systems at the national, international, and global levels were shaped by state and non-state actors with specific interests. The divergences in actors' interests resulted in different sets of legal agreements negotiated in different forums. Three themes explored in this thesis from the above are: (i) actors' involvement in plant variety protection law-making; (ii) the interconnections between TRIPS and other agreements relevant to plant varieties, namely the UPOV Convention, the CBD, and the ITPGRFA; and (iii) the debates or concerns surrounding the different legal principles and systems relevant to plant variety protection.

1.2. Research Questions

As highlighted in the preceding part, the global minimum IPRs standard for plant varieties introduced under TRIPS obliges Nigeria to design a plant variety protection system. Prior to TRIPS, plant variety protection was uncommon in the Global South, including in Nigeria.¹²³ Therefore, the TRIPS obligation to protect

¹²² Santos also explains localised globalisation as the restructuring of the local terrain as a result of globalisation. Boaventura de Sousa Santos, 'Globalizations' (2006) 23 *Theory, Culture and Society* 393, 396. See also Boaventura de Sousa Santos, *Toward a New Legal Common Sense: Law, Globalization and Emancipation* (Cambridge University Press 2002).

¹²³ For example, within Africa, only Kenya, South Africa and Zimbabwe had introduced plant variety protection systems prior to TRIPS. Peter Drahos, 'Global Property Rights in Information: The Story of TRIPS at the GATT (1995) 13(1) *Prometheus* 6, 6; GRAIN, 'For a Full Review of TRIPS 27.3(b)' (GRAIN Reports 2000) <<https://www.grain.org/article/entries/39-for-a-full-review-of-trips-27-3-b>> accessed 26 July 2017; Philippe Cullet, 'Plant Variety Protection in Africa: Towards Compliance with the TRIPS Agreement' (2001) 45 (1) *Journal of African Law* 97, 97.

plant varieties, coupled with its apparent latitude, has created implementation conundrums in the Global South for two reasons. First, plant variety protection is a highly specialised type of IPRs, with wide-ranging impacts on small-scale farmers, research institutes, seed companies, and the society in general. Second, the range of stakeholders who are affected by plant variety protection systems give rise to pressures from specific state and non-state actors to push for preferred plant variety protection systems at the national level. Thus, plant variety protection is not narrowly about determining appropriate legal systems; it involves political, economic, and social dynamics.

Considering these deeper implications of plant variety protection, one can argue that Nigeria and the other Global South countries should simply opt out of TRIPS. However, the strategic integration of TRIPS as part of the WTO set of compulsory agreements which was conceived by the US means that countries cannot cherry-pick preferred agreements.¹²⁴ This is because the WTO agreements constitute a ‘Single Undertaking’ so countries cannot simply opt out of agreements that are unfavourable to them.¹²⁵ Countries desirous of participating in the WTO multilateral trading system remain WTO members. As such, the conundrum about plant variety protection under TRIPS in the Global South subsists. This thesis examines this conundrum by asking the questions below.

Central Research Questions:

- 1. Considering the obligation for all WTO members to protect plant varieties set out in Article 27.3(b) of TRIPS, what type of plant variety protection system is best suited to Nigeria?*

¹²⁴ The US, backed by multinationals such as Monsanto, Pfizer, IBM, and Microsoft, first devised the idea of linking IPRs to trade by amending Section 301 of its Trade Act to incorporate IPRs provision. This strategic link of trade to IPRs was what informed the inclusion of TRIPS in the WTO to ensure stronger enforcement. Prior to TRIPS, IPRs were generally governed under WIPO. Braithwaite and Drahos, *Global Business Regulation* (n 112) 61-63; Peter Drahos and John Braithwaite, *Information Feudalism: Who Owns the Knowledge Economy?* (Earthscan 2002) 88-107 (*Information Feudalism*).

¹²⁵ Richard Steinberg, ‘In the Shadow of Law or Power? Consensus-Based Bargaining and Outcomes in the GATT/WTO’ (2002) 56(2) *International Organization* 339, 359-360.

2. *Cognisant of the Global North-Global South narratives and counter-narratives, alongside the interconnections between Article 27.3(b) of TRIPS, the UPOV Convention, the CBD, and the ITPGRFA, how can Nigeria design and introduce such plant variety protection system which is best suited to it?*

The central research questions seek to understand Nigeria's plant variety protection *status quo*, the plant variety protection system best suited to it, as well as what it needs to have in place to design and introduce such system.

Subsidiary Research Question:

Why are Global South WTO members increasingly adopting the UPOV plant breeder's rights system despite their advocacy at the TRIPS Council for sui generis systems that incorporate access and benefit sharing as well as farmers' rights principles?

The subsidiary research question seeks to elucidate reasons for the contradictions between Global South WTO members' 'rhetoric' at the TRIPS Council and their actions at home. At the TRIPS Council, Global South WTO members express preference for creatively designed *sui generis* systems that incorporate principles from the CBD and the ITPGRFA. Yet, there is a proliferation of the UPOV 1991 Convention in the Global South. Accordingly, the question not only seeks to address the problems and challenges with plant variety protection law-making in the Global South, it also seeks to illuminate the possibilities for Nigeria to introduce the plant variety protection system best suited to it.

The answers to these research questions are woven throughout the thesis. Chapter 2 sets out a background of the existing laws, policies, and practices relevant to plant varieties in Nigeria to explain its current state of affairs. This background delineates Nigeria's realities and attempts to answer the first central research question. Chapter 3 examines the plant variety protection options under TRIPS; it

delves into Global North-Global South debates and contestations on plant variety protection, with the aim of discovering the plant variety protection system best suited to Nigeria's realities. As a result, Chapter 3 also contributes to answering the first central research question. Chapters 4 and 5 tease out factors that contribute to variations in plant variety protection systems in the Global South, extracting lessons for Nigeria. That is, the factors that can impinge or facilitate the successful introduction of the plant variety protection system suited to Nigeria's realities. Thus, Chapters 4 and 5 answer the subsidiary research question. Chapter 6 revisits the Nigerian case study introduced in Chapter 2, by applying the findings from Chapters 3 to 5. Therefore, Chapter 6 answers the second central research question. The next part discusses the methodology employed to answer these questions.

1.3. Methodology

Although there are a variety of ways to frame this thesis, food sovereignty was initially considered. However, the problem with the food sovereignty frame is that it is narrow, as it only focuses on certain issues unpacked in the thesis. It does not provide the lens to engage in the robust analysis the author attempts to present. Food sovereignty is principally about the rights of people directly involved in farming and producing food to democratically shape their own food systems.¹²⁶ It seeks to regain control of the food system from large multinational corporations and international institutions, by placing it back in the hands of local peoples, communities, and national governments.¹²⁷ Food sovereignty prioritises local markets by promoting small-scale driven food production, distribution, and consumption based on environmental, social, and economic sustainability.¹²⁸ But local production and food self-sufficiency is not the central focus of this thesis. In other words, this thesis engages in a more nuanced and complex discussion than

¹²⁶ Raj Patel, 'What does Food Sovereignty Look Like?' (2009) 36(3) *Journal of Peasant Studies* 663, 663.

¹²⁷ Christina Schiavoni, 'The Global Struggle for Food Sovereignty: From Nyeleni to New York' (2009) 36(3) *Journal of Peasant Studies* 682, 682-89; Tania Murray Li, 'Can there be food sovereignty here?' (2015) 41(2) *The Journal of Peasant Studies* 205, 206.

¹²⁸ Hannah Wittman, Annette Auriele Desmarais, and Nettie Wiebe, 'The Origins and Potential of Food Sovereignty' in Hannah Wittman, Annette Auriele Desmarais and Nettie Wiebe (eds), *Food Sovereignty, Reconnecting Food, Nature and Community* (2010) 2.

the insights that food sovereignty provides. Thus, the author turns to critical legal theory, particularly the Third World Approaches to International Law (TWAIL).¹²⁹

Third World Approaches to International Law

TWAIL is a critical way of thinking about international law through the lens of Third World peoples. Like the African proverb '[u]ntil the lions have their own historians, tales of the hunt will always glorify the hunter', TWAIL tells the story of international law from the perspective of the Third World.¹³⁰ In this way, TWAIL scholars produce otherwise untold alternative narratives about international law.¹³¹ Put differently, TWAIL scholarship produces counter-narratives to mainstream international law. In recounting Third World narratives and counter-narratives, TWAIL scholars pay attention to the historical foundations of international law in order to understand its present form.¹³² Here, TWAIL scholars maintain that it is only by looking to the past that one can understand the

¹²⁹ TWAIL is a distinct strand of Critical Legal Theory (CLT). CLT challenges accepted norms and standards in international legal theory and practice. From the CLT perspective, law is neither neutral nor determinate; law is politics. That is, law and politics are indistinguishable from one other. According to the CLT school of thought, laws are created out of the power relationships of society. These laws are constantly redefined and reworked to suit the interests of the actors that create them. Thus, CLT exposes the perceived flaws in international law, calling for radical changes to emancipate individuals and societies from the structures of power that restrict or victimise them. For discussions on CLT, see generally, Roberto Mangabeira Unger, 'The Critical Legal Studies Movement' (1983) 96(3) *Harvard Law Review* 561; Alan Hunt, 'The Theory of Critical Legal Studies' (1986) 6 *Oxford Journal of Legal Studies* 1; Nigel Purvis, 'Critical Legal Studies in Public International Law' (1991) 32(1) *Harvard International Law Journal* 81; Anthony Carty, 'Critical International Law: Recent Trends in the Theory of International Law' (1991) 2 *European Journal of International Law* 66; Jason Beckett, 'Critical International Legal Theory' (2012) *Oxford Bibliographies Online Datasets*.

¹³⁰ This proverb exists in different forms around Africa, including in Benin, Ghana, Togo, Kenya, Zimbabwe, and Nigeria. Chinua Achebe, the renowned Nigerian literary icon and author of *Things Fall Apart* (William Heinemann Ltd 1958), quoted this proverb in an interview with the *Paris Review of Books* in 1994. Achebe concluded that writing African histories is important to ensure that the story of the hunt 'will also reflect the agony, the travail – the bravery, even, of the lions.' Interview by Jerome Brooks, 'Chinua Achebe, The Art of Fiction No. 139' (Issue 133, Winter 1994) <<https://www.theparisreview.org/interviews/1720/chinua-achebe-the-art-of-fiction-no-139-chinua-achebe>> accessed 23 July 2017.

¹³¹ James Thuo Gathii, 'Alternative and Critical: The Contribution of Research and Scholarship on Developing Countries to International Legal Theory, Symposium Issue Forward' (2000) 41(2) *Harvard International Law Journal* 263, 265 ('Alternative and Critical').

¹³² James Thuo Gathii, 'TWAIL: A Brief History of its Origins, its Decentralized Network and a Tentative Bibliography' (2011) 3(1) *Trade Law and Development* 26, 30 ('TWAIL: A Brief History of Its Origins').

present, and in turn, rethink the future of international law to make it more responsive to the concerns of the Third World.¹³³

James Thuo Gathii explains that TWAIL's origins can be traced to the spring of 1996 at the Harvard Law School, when a group of graduate students initiated a series of meetings to discuss Third World perspectives about international law.¹³⁴ This group of students consisting of James Thuo Gathii, Balakrishnan Rajagopal, Celestine Nyamu, Elchi Noworeje, Hani Sayed, and Vasuki Nesiah, along with visiting scholar Bhupinder Chimni, coined the name 'Third World Approaches to International Law.'¹³⁵ The group had three interrelated objectives: (i) to present new ways of thinking about international law from the perspective of the Third World;¹³⁶ (ii) to change historical narratives of international law by telling Third World stories;¹³⁷ and (iii) to formulate substantive critiques of mainstream international law to uncover its role in producing structures that marginalise and dominate Third World peoples.¹³⁸ The TWAIL vision statement, drafted in 1997, reflects these objectives.¹³⁹

For these TWAIL scholars, 'Third World' goes beyond the geographical boundaries of a nation.¹⁴⁰ 'Third World' is emblematic of peoples with shared historical experiences of colonisation or similar concerns of oppression, underdevelopment, or marginalisation.¹⁴¹ Balakrishnan Rajagopal – one of the

¹³³ Makau Mutua, 'What is TWAIL?' (2000) *The American Society of International Law Proceedings of the 94th Annual Meeting*, Washington DC 31, 31-32 ('What is TWAIL?').

¹³⁴ Gathii, 'TWAIL: A Brief History of its Origins' (n 133) 28. Although the discussions about TWAIL formally started at Harvard in 1996, TWAIL scholars also recognise the contributions of earlier Third World scholars who wrote about Third World interests in the decolonisation period, such as R P Anand, Mohammed Bedjaoui, Taslim Elias, George Abi-Saab, Nagendra Singh and Christopher Weeramantry.

¹³⁵ *ibid.*

¹³⁶ *ibid.*

¹³⁷ *ibid.*

¹³⁸ *ibid.*

¹³⁹ TWAIL Vision Statement, see Karin Mickelson, 'Taking Stock of TWAIL Histories' (2008) 10 *International Community Law Review* 355, 357-58.

¹⁴⁰ B S Chimni, 'Third World Approaches to International Law: A Manifesto' (2006) 8 *International Community Law Review* 3, 4-5.

¹⁴¹ Balakrishnan Rajagopal, 'Locating the Third World in Cultural Geography' (1998-1999) *Third World Legal Studies* 1, 19-20 ('Locating the Third World in Cultural Geography'); Balakrishnan Rajagopal, 'International Law and Social Movements: Challenges of Theorizing Resistance' (2002-2003) 41 *Columbia Journal of Transnational Law* 397 ('International Law and Social Movements');

TWAIL originators – explains that in defining ‘Third World’, ‘the emphasis henceforth, would be on the actual terrain that power operates on, rather than some predetermined given one such as the ‘nation.’¹⁴² Viewing ‘Third World’ in this way enables us to address forms of marginalisation and struggles such as gender, sexuality, class, and minority groups, amongst others. Applying this definition of Third World to this thesis would mean ‘Third World’ also refers to marginalised small-scale farmers whose interests are excluded from certain plant variety protection systems such as patents and UPOV ‘plant breeders’ rights’ systems. This aligns with Karin Mickelson’s construct, which recognises the differences between and within Third World countries, yet describes ‘Third World not as a bloc, but as a distinctive voice, or, more accurately, as a chorus of voices that blend, though not always harmoniously, in attempting to make heard a common set of concerns’.¹⁴³

In imagining ways to ensure that the voices of the marginalised peoples are heard, Rajagopal proposes the rethinking of international law by paying close attention to interventions of social movements.¹⁴⁴ The investigation of these interventions reveals how concerted social movement actions have driven international legal developments. That is, international legal norms are increasingly produced and shaped through the interaction between states, international institutions, and social movement networks of farmers, peasants, and environmentalists, amongst others.¹⁴⁵ An example from this thesis shows that farmers’ rights principles in the International Undertaking, and subsequently in the ITPGRFA, were products of both social movements along with the influence of Global South countries.¹⁴⁶ Some

Balakrishnan Rajagopal, *International Law from Below: Development, Social Movements, and Third World Resistance* (Cambridge University Press, 2005) (*International Law from Below*); Obiora Chinedu Okafor, ‘Newness, Imperialism and International Legal Reform in Our Time: A TWAIL Perspective?’ (2005) 43 Osgoode Hall Law Journal 171, 174-75 (‘Newness, Imperialism and International Legal Reform in Our Time’); B S Chimni, ‘Capitalism, Imperialism, and International Law in the Twenty-First Century’ (2012) 14 Oregon Review of International Law 17, 19.

¹⁴² Rajagopal, ‘Locating the Third World in Cultural Geography’ (n 141) 20.

¹⁴³ Karin Mickelson, ‘Rhetoric and Rage: Third World Voices in International Legal Discourse’ (1998) 16(2) Wisconsin International Law Journal 353, 360.

¹⁴⁴ Rajagopal, ‘International Law and Social Movements’ (n 141) 397.

¹⁴⁵ *ibid* 400.

¹⁴⁶ See 1.1 above.

of the active social movements involved in promoting small-scale farmers' interests in recent times include the African Centre for Biodiversity (ACB), Gene Campaign, GRAIN, and La Via Campesina.

While TWAIL scholars engage with international law through the lens of Third World peoples, they undertake this in a variety of ways. TWAIL is a fluid approach comprising of scholars who blend, recycle, and revisit archives of TWAIL and non-TWAIL ideas to present novel ways of viewing international law through the lens of the Third World.¹⁴⁷ However, this fluidity or diversity within the TWAIL movement is one of its criticisms.¹⁴⁸ David Fidler argues that TWAIL needs to be more coherent, as it 'can neither be a dogma nor cacophony of contradictory claims.'¹⁴⁹ A response to this criticism is that the fluidity of TWAIL scholarship generates vibrant discourses, allowing imaginative expansion of TWAIL, which this thesis seeks to achieve. In essence, TWAIL accommodates all international law scholarship which self-identifies as a TWAIL approach, through shared commitments to concerns about the Third World. This open-ended decentralised approach encourages new TWAIL scholars to introduce novel analytical tools to address Third World concerns, thus creating their own version of TWAIL. Ultimately, these novel TWAIL analyses contribute to the smorgasbord of TWAIL ideas.

Nonetheless, TWAIL scholarships share these three themes. First, TWAIL scholarship critique international law by providing historical evidence to challenge

¹⁴⁷ For example, Eslava introduces the concept of 'enframing', drawing an analogy from photography to explain how 'both international law and photography have a tendency to draw our gaze to exceptional events and sites, often leaving aside what they consider the 'ordinary' or 'everyday'. Enframing is a way to determine a particular view of the world by focusing on certain events or features over others. Luis Eslava, 'Istanbul Vignettes: Observing the Everyday Operation of International Law' (2014) 2 *London Review of International Law* 3.

¹⁴⁸ Gathii explains that TWAIL is not easy to organise effectively, unlike other critical movements scholars such as LatCrits. He notes that LatCrits hold annual conferences and have regular law review volumes that publish conference proceeding. And unlike TWAIL, they have an organisational structure in addition to guidelines for forewords, afterwords, and cluster introductions for their symposium publications. Gathii, 'TWAIL: A Brief History of its Origins' (n 132) 37.

¹⁴⁹ David Fidler, 'Revolt Against or From Within the West? TWAIL, the Developing World, and the Future Direction of International Law' (2003) 2(1) *Chinese Journal of International Law* 29, 73.

partial narratives of international law.¹⁵⁰ Second, such historical context of international law disinters ways through which particular aspects of international law are unjust to Third World peoples or affect the Third World.¹⁵¹ TWAIL scholarship may stop at critiquing and highlighting features of international law which are unjust or affect the Third World. However, some TWAIL scholarship proceed to the third common theme, which is to attempt to reform or even transform the unjust international law.¹⁵² Notably, the common themes that run through TWAIL scholarship contribute to a robust understanding of international law vis-à-vis Third World peoples, which is absent in the partial mainstream narratives produced by Western international law scholars. These three themes run throughout this thesis. The thesis not only provides a historical context of plant variety protection, it examines implications of dominant IPRs systems for plant varieties in the Global South, that is, patents and the UPOV plant breeder's rights system. The thesis goes on to suggest a plant variety protection system suited to a Third World country, Nigeria, and attempts to rethink the global legal architecture for plant varieties.

Application of TWAIL to Thesis

TWAIL applies to this thesis in two significant ways. First, it provides the broad historical lens that challenges a simplistic legal analysis of substantive plant variety protection provisions. As Gathii rightly notes, history is an important part of TWAIL scholarship as it contributes to knowledge production from Third World perspectives.¹⁵³ Significantly, the historical context emphasises the interconnectedness of plant variety protection laws and other subject areas such as politics and economics. In this thesis, the historical analysis illuminates the origins of the TRIPS global minimum standards for plant variety protection obligations from the US and Europe, international North-South contestations about plant

¹⁵⁰ Mutua, 'What is TWAIL?' (n 133) 31.

¹⁵¹ *ibid.*

¹⁵² *ibid* 35-36.

¹⁵³ Gathii, 'TWAIL: A Brief History of its Origins' (n 132) 35-39.

variety protection, as well as the political and economic dynamics in plant variety protection law-making at the national level.

Second, TWAIL provides the analytical lens to reform or transform international law to make it reflective of the interests and aspirations of the marginalised small-scale farmers. The TWAIL scholars' approach to the reform or transformation of international law provides insights for analysis in this thesis in two ways. Balakrishnan Rajagopal envisions reforms or transformation of international law through social movements, while Luis Eslava and Sundhya Pahuja envision reform or transformation of international law through its implementation at the national level. As previously discussed, Rajagopal emphasises the role of CSOs in reforming or transforming international law. Indeed, he argues that social movements have a significant role to play in ensuring that the voices of marginalised peoples are heard.¹⁵⁴ Analysing plant variety protection through the lens of social movement actions shows how counter-narratives such as farmers' rights have evolved and reshaped the global legal architecture for plant varieties. At the national level, the creative *sui generis* plant variety protection systems in India and Thailand were the outcome of the activism of domestic CSOs, with support from international CSOs.

Furthermore, in conceptualising the reform or transformation of international law, Eslava and Pahuja propose looking beyond reforms at the international level.¹⁵⁵ They draw attention to how implementation of international law at the national level, especially in the Global South, can silently expand its interpretation, thereby contributing to reforms of international law.¹⁵⁶ This perspective uncovers how the creative interpretation of the obligation to protect plant varieties under TRIPS in India and Thailand have expanded the definition of the *sui generis* option. For example, provisions such as the protection of farmers' varieties in Section 14 of

¹⁵⁴ Rajagopal, 'International Law and Social Movements' (n 141) 399-400.

¹⁵⁵ Luis Eslava and Sundhya Pahuja, 'Beyond the (Post) Colonial: TWAIL and the Everyday Life of International Law' (2012) 45(2) *Journal of Law and Politics in Africa, Asia and Latin America – Verfassung und Recht in Übersee (VRU)* 1, 28 ('Beyond the (Post) Colonial').

¹⁵⁶ *ibid.*

India's Protection of Plant Varieties and Farmers' Rights Act 2001 (PPVFRA), and the protection of local domestic varieties in Section 43 of Thailand's Plant Variety Protection Act 1999 broadened the categories of protected plant varieties from the narrow focus on 'new varieties' under the UPOV Convention. These successful interventions at the national level can serve as guides for subsequent reforms to plant variety protection provisions under TRIPS or even under the UPOV Convention. Indeed, this thesis looks to the Thai and Indian examples in discussions about implementing TRIPS in Nigeria as well as on reforms to the global legal architecture for plant varieties.

From the above, TWAIL provides the lens to understand the historical context, narratives and counter-narratives, role of actors especially CSOs, and implementation of international law to suit Third World interests. Although TWAIL provides the macro-methodological lens for this thesis, it is supplemented with 'regime complexity' which illuminates certain nuances in the analysis of plant variety protection regimes set out in this thesis as seen below.

Regime Complex

Kal Raustiala and David Victor define regime complex as an array of partially overlapping and non-hierarchical institutions governing a particular subject matter.¹⁵⁷ The term 'regime', borrowed from international relations theory, is defined as 'implicit or explicit principles, norms, rules and decision-making procedures around which actors' expectations converge in a given area of international relations.'¹⁵⁸ Regime complexes manifest through the existence of legal agreements created and maintained in different fora with the participation of

¹⁵⁷ Kal Raustiala and David Victor, 'The Regime Complex for Plant Genetic Resources' (2004) 58(2) *International Organization* 277 ('The Regime Complex for Plant Genetic Resources').

¹⁵⁸ Stephen D Krasner, 'Structural Causes and Regime Consequences: Regimes as Intervening Variables' (1982) 36(2) *International Organization* 185, 186. For detailed discussions of regimes, see also Robert Keohane, 'The Demand for International Regimes' (1982) *International Organization* 325; Andreas Hansenclever, Peter Mayer, and Volker Rittberger (eds), *Theories of International Regimes* (Cambridge University Press 1997).

different sets of actors.¹⁵⁹ The agreements in these regimes functionally overlap, however there is no agreed hierarchy for resolving conflicts between them.¹⁶⁰ The agreements covering plant variety protection are TRIPS, the UPOV Convention, the ITPGRFA, and the CBD alongside regional and bilateral agreements. Apart from state actors, non-state actors involved in the plant variety protection regime include intergovernmental organisations, regional organisations, CSOs, and seed companies.

The existence of overlapping institutions covering one subject enables actors to relocate rule-making processes to international institutions where they are best able to promote preferred rules and achieve desired outcomes – otherwise known as forum or regime shifting.¹⁶¹ John Braithwaite and Peter Drahos define forum shifting as a strategy through which powerful actors (from the Global North) seek to shift a specific agenda from one international forum to another, or at times attempt to entirely abandon a forum when they consider their interests as being threatened.¹⁶² While Braithwaite and Drahos explain that only powerful actors forum shift, Laurence Helfer points out that both powerful and relatively weak parties (from the Global South) can engage in ‘regime shifting.’¹⁶³ Helfer observes

¹⁵⁹ While scholars such as Martti Koskenniemi refer to the existence of overlapping sets of legal agreements governing an issue as ‘fragmentation’ of international law, the regime complex lens transcends the fragmentation approach, as it also looks at the actors, institutions, and power dynamics involved where there are overlapping and non-hierarchical agreements covering a particular issue. For fragmentation of international law, see generally Andreas Fischer-Lescano and Gunther Teubner, ‘Regime-Collisions: The Vain Search for Legal Unity in the Fragmentation of Global Law’ (Michelle Everson tr, 2004) 25 *Michigan Journal of International Law* 999; *Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law* (Finalized by Martti Koskenniemi, United Nations 2006) Report of the Study Group of the International Law Commission; United Nations, *Conclusions of the Work of the Study Group on the Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law* (Adopted by the International Law Commission at its 58th Session in 2006); Martti Koskenniemi, ‘The Fate of Public International Law: Between Technique and Politics’ (2007) 70(1) *The Modern Law Review* 1; Eyal Benvenisti and George Downs, ‘The Empire’s New Clothes: Political Economy and the Fragmentation of International Law’ (2007) 60 *Stanford Law Review* 595.

¹⁶⁰ Raustiala and Victor, ‘The Regime Complex for Plant Genetic Resources’ (n 157) 279.

¹⁶¹ Braithwaite and Drahos, *Global Business Regulation* (n 112) 564; Laurence R Helfer, ‘Regime Shifting in the International Intellectual Property System’ (2009) 7(1) *Perspectives on Politics* 39, 39 (‘Regime Shifting in the International Intellectual Property System’).

¹⁶² Braithwaite and Drahos, *Global Business Regulation* (n 112) 564.

¹⁶³ Braithwaite and Drahos, *Global Business Regulation* (n 112) 565; Helfer, ‘Regime Shifting’ (n 98) 17.

that regime shifting provides an opportunity for Global South countries to create ‘counter regime norms’, which are binding treaty rules and non-binding soft law standards that seek to reshape existing international laws.¹⁶⁴ For plant variety protection, these counter-regime norms are farmers’ rights along with access and benefit-sharing principles.

However, Daniel Drezner perceptively points out that overlapping institutions with contradictory mandates could raise the costs of compliance for all actors, which create dynamics that favour the Global North.¹⁶⁵ This is because Global North countries possess greater capabilities or strategies for institutional creation, monitoring, and enforcement.¹⁶⁶ Indeed, negotiating international treaties in regimes with inconsistent elements – or divergent provisions – requires technical expertise and resources which are more readily available to Global North countries than to Global South ones. This is evidenced by the role of Global North countries such as the US, the EU, Japan, and Canada in the TRIPS negotiations.

While the regime complex lens provides useful insights for understanding the increasing density of international agreements and interactions among institutions relevant to plant variety protection, its sole focus on the regimes under study is one of its criticisms.¹⁶⁷ For example, the focus on the plant variety protection regimes alone does not completely explain the consequences of the overlapping regimes on small-scale farmers at the national level. Karen Alter and Sophie Meunier call scholars who apply the regime complex theory ‘to give equal weight to analysing the consequences of regime complexity for issues they care about.’¹⁶⁸

¹⁶⁴ Helfer, ‘Regime Shifting’ (n 98) 14.

¹⁶⁵ Daniel W Drezner, ‘The Power and Peril of International Regime Complexity’ (2009) 7(1) *Perspectives on Politics* 65, 66 (‘The Power and Peril of International Regime Complexity’).

¹⁶⁶ *ibid.*

¹⁶⁷ Karen Alter and Sophie Meunier, ‘The Politics of International Regime Complexity’ (2009) 7(1) *Perspectives on Politics* 13, 21 (‘The Politics of International Regime Complexity’).

¹⁶⁸ *ibid.*

Application of Regime Complex to Thesis

The key insight that regime complex provides for analysis in this thesis is that it draws attention to how the overlapping non-hierarchical regimes shape and constrain the introduction of plant variety protection systems at the national level.

While Global South actors may succeed in introducing preferred provisions in alternative international treaties, implementation of these provisions at the national level may be undermined through provisions in other regimes. This is reflected in the plant variety protection example. Although Global South actors succeeded in pushing for farmers' rights along with access and benefit sharing in the FAO and the CBD, Global North countries such as the US and European countries have restricted certain Global South countries from designing creative *sui generis* systems through additional bilateral trade or investment agreements – otherwise known as 'TRIPS-plus' agreements.¹⁶⁹ These TRIPS-plus agreements eliminate or substantially constrain some Global South countries' flexibility to implement preferred plant varieties protection systems by expressly mandating them to enact UPOV plant breeder's rights systems that favour multinational agribusinesses.

Furthermore, regime complex characterised by overlapping institutions covering one subject matter also translates to fragmentation of institutions with mandates to implement treaties at the national level. For example, in Nigeria, the Ministry of Trade and Ministry of Justice have the mandate for IPRs-related matters under TRIPS. The Ministry of Agriculture is responsible for food and agriculture issues – including farmers' rights under the FAO – while the Ministry of Environment covers biodiversity matters, including access and benefit-sharing under the CBD. Yet there is no synergy amongst these institutions. As such, while the Global South may push for pockets of preferred principles in favourable international institutions, reconciling the different principles in a coherent national legislation may be a bigger challenge. Conversely, for the often more experienced Global

¹⁶⁹ Helfer, 'Regime Shifting in the International Intellectual Property System' (n 161) 43. See Chapter 4 for a discussion on TRIPS-plus agreements.

North actors, regime complexity provides an opportunity to implement their preferred interpretation of the international treaty obligations.

In sum, TWAIL supplemented with regime complex theory draws attention not only to the broad historical contexts, role of actors, narratives and counter-narratives, but also to strategies such as bilateral trade agreements which could further expand rules in the overlapping plant variety protection regimes. While TWAIL seeks to reform or transform international law, it is also important to pay attention to other factors that may impede the implementation of the proposed alternative legal systems at the national level. It is here that TWAIL scholars such as Eslava and Pahuja's call for careful implementation of international law at the national level dovetails with insights from regime complex.

1.4. Note on Methods

The research for this thesis involves empirical and comparative studies alongside contextual analysis of primary and secondary literature. The empirical study conducted in Nigeria for over a period of three months – from August to October 2015 – draws on 52 semi-structured interviews with stakeholders relevant to plant variety protection. The stakeholders include small-scale farmers, farming communities, CSOs, plant breeders, academics, legal practitioners, and government officials from the Ministries of Agriculture, Environment, Justice, and Trade.

As this thesis seeks to provide deeper insights into plant variety protection in Nigeria which is otherwise unavailable in literature, semi-structured interviews were adopted. Semi-structured interviews are flexible interview methods where the interviewer has guide questions, but also discretion in the order of interrogation.¹⁷⁰ The semi-structured interview method was useful to elicit detailed information

¹⁷⁰ Martin Packer, *The Science of Qualitative Research* (Cambridge University Press 2011) 43; Tim May, *Social Research: Issues, Methods and Process* (4th edn, Open University Press 2011) 134-35 (*Social Research*); Martyn Denscombe, *The Good Research Guide for Small-Scale Social Research Projects* (5th edn, Open University Press 2014) 186-87.

from the interviewees, as the interviewer could seek elaboration and clarification of answers given.¹⁷¹

The interviewees were selected based on their knowledge of relevant issues covered in the thesis, their willingness to participate, and availability (see Appendix 1 for list of interviewees). Significantly, the interviewees' responses sufficiently covered the range of issues investigated. Irving Seidman highlights two criteria for determining how many interviewees are enough for a study: sufficiency and saturation of information.¹⁷² Sufficiency is where the numbers reflect the range of participants, while saturation is the point where the researcher starts hearing the same information and no longer learns anything new.¹⁷³

The main challenge in conducting the semi-structured interviews was access to the potential interviewees. The author sent out over 35 formal electronic mails and letters to potential interviewees to initiate contact prior to fieldwork, but only 11 responses were received. Reasons for the low response rate to electronic mail could be limited access to internet services, lack of interest or awareness about plant variety protection, or simply lack of motivation to reply. However, one of the ways in which the author was able to obtain access to the interviewees was by attending a workshop organised to review the guidelines and regulations for Nigeria's Biosafety Act.¹⁷⁴ Johnson Ekpere (the author's fourth interviewee) informed the author about this workshop during her interview with him, and assured her that many of her potential interviewees would attend, which was indeed the case. Ekpere introduced the author to them, which made subsequent scheduling of interviews easier.¹⁷⁵ The second way in which the author obtained access to the interviewees, particularly top government officials, was by interning at the WTO

¹⁷¹ May, *Social Research* (n 170) 134-35.

¹⁷² Irving Seidman, *Interviewing as Qualitative Research: A Guide for Researchers in Education and the Social Sciences* (Teachers College Press New York 2006) 55.

¹⁷³ *ibid.*

¹⁷⁴ 'Biosafety Guideline and Regulation Review Workshop: A Workshop to review the Guidelines and Regulations of the National Biosafety Management Agency Law' (Abuja, 18-20 August 2015).

¹⁷⁵ The snowball method was adopted here. Snowballing is where one participant introduces or informs the researcher about other participants. Michael Lewis-Beck, Alan E Bryman, and Tim Futing Liao, *The Sage Encyclopaedia of Social Science Research Methods* (Sage Publications 2003).

office in Nigeria's Federal Ministry of Industry, Trade, and Investment. With this role, the author had direct access and referrals to the government officials working on plant variety protection-related issues in Nigeria. However, the author was unable to interview all the targeted interviewees, as some government officials and academics did not respond to interview requests or were unable to commit to a time for the interview due to busy schedules. Nonetheless, the comprehensive responses from the interviews granted outweighed the few refusals.

The comparative study involved an analysis of the variations in plant variety protection in the Global South. The author examined Global South countries with both UPOV plant breeder's rights systems and creative *sui generis* systems. The aim of this examination was to draw lessons on plant variety protection law-making for Nigeria. For the group of countries with UPOV plant breeder's rights systems, the author examined examples from African regional organisations such as the African Intellectual Property Organisation (OAPI), and countries such as Kenya, South Africa, Tanzania, Tunisia, and Morocco. For examples of countries with creative *sui generis* systems, the author examined India and Thailand's plant variety protection systems.

African countries with UPOV 'plant breeders' rights' systems provide useful lessons for Nigeria for two reasons. First, these African countries and Nigeria subscribe to the African Model Law, which provides guidelines for countries seeking to design *sui generis* plant variety protection systems. Second, the African countries and Nigeria contribute to the African position at the TRIPS Council, which advocates for a *sui generis* plant variety protection system. Notwithstanding the African Model Law and Africa's common position at the TRIPS Council, these African countries have joined UPOV. Therefore, understanding why they joined UPOV would provide invaluable lessons for Nigeria because it still has pending obligations to design a plant variety protection system under TRIPS.

The Indian and Thai experiences are useful examples for a variety of reasons. First, India and Thailand, along with Nigeria and other Global South WTO members,

started with the same position on plant variety protection at the TRIPS Council. These Global South countries collectively advocated for creative *sui generis* systems as the most suited option to protect plant varieties. While India and Thailand translated their ‘rhetoric’ into domestic legal architecture, Nigeria is yet to do so. Examining how India and Thailand successfully translated the common Global South position at the TRIPS Council into domestic law provides useful lessons for Nigeria. Second, both India and Thailand have a large population of small-scale farmers, similar to Nigeria. Paying attention to how small-scale farmers’ interests are addressed in India and Thailand’s plant variety protection system can guide Nigeria. Third, both India and Thailand have private seed companies operating in their seed sectors, which is one of the Nigerian government’s agricultural policy objectives. The Nigerian government’s current agricultural policy seeks to promote private sector investments in agriculture.¹⁷⁶ Understanding how India and Thailand balance private seed companies’ and small-scale farmers’ interests generates lessons for Nigeria.

The analysis in this thesis also draws from a wide range of primary and secondary sources. The key primary sources include texts of TRIPS, the CBD, the ITPGRFA, the UPOV Convention, the African Model Law, national plant variety protection laws, and case law. Other official sources on the international treaties include the TRIPS, CBD, ITPGRFA, UPOV and WIPO documents. The research for this thesis benefited from secondary sources such as government, industry, and CSO documents, including working papers and policy reports from national workshops on IPRs in Nigeria, the African Centre for Biodiversity (ACB), Farmers’ Rights Resource Pages, GRAIN, Gaia Foundation, UK Commission on Intellectual Property Rights, Crucible Group, South Centre, Association of Plant Breeders for the Benefit of Society (APBREBES), as well as the International Plant Genetic Resources Institute (IPGRI), amongst others. Furthermore, textbooks, articles, and web sources on plant variety protection-related issues also provided useful sources of data. Both the primary and secondary sources were accessible from libraries (mainly the University of Warwick library and the British Library) and online.

¹⁷⁶ FMARD, *The Agriculture Promotion Policy* (n 20).

Overall, the empirical study supplemented the limited literature on plant variety protection in Nigeria. It not only generated new data, it also broadened or clarified data from existing literature. Furthermore, both the comparative study and range of sources consulted helped to provide a richer understanding of the plant variety protection debates.

1.5. Original Contributions

This thesis provides original empirical, analytical, and methodological contributions to literature on plant variety protection. First, the thesis presents original empirical analysis of plant variety protection in Nigeria. Previous scholarly studies have discussed access and benefit sharing, farmers' rights, and IPRs in Nigeria's agricultural sector, however no study has discussed the historical and political economy context of plant variety protection in Nigeria.¹⁷⁷ Thus, in being the first empirical study of plant variety protection in Nigeria, the thesis makes an original contribution to the existing literature.

Second, the thesis develops a novel analytical framework for studying plant variety protection law-making in the Global South. The thesis proposes that factors that

¹⁷⁷ For literature on access and benefit sharing, farmers' rights, and IPRs in the agricultural sector in Nigeria, see generally Olawale Ajai, 'Access to Genetic Resources and Biotechnology Regulation in Nigeria' (1997) 6(1) Review of European, Comparative and International Environmental Law 42; Oludayo Amokaye, 'The Convention on Biological Diversity, Access to and Exploitation of Genetic Resources and the Land Tenure System in Nigeria' (1999) 11(1) African Journal of International and Comparative Law 86; Kent Nnadozie, 'Access to Genetic Resources in Nigeria' in Kent Nnadozie, Robert Lettington, Carl Bruch, Susan Bass, and Sarah King (eds), *African Perspectives on Genetic Resources: A Handbook on Laws, Policies and Institutions* (Environmental Law Institute 2003); Kent Nnadozie, 'Nigeria' in Robert J Lewis-Lettington and Sarah Mwanyiki (eds), *Case Studies on Access and Benefit Sharing* (International Plant Genetic Resources Institute 2006); Victor M Ibigbami and Christopher Orji, 'A Review of the Nigerian System of Intellectual Property' in *Institutionalisation of Intellectual Property Management: Case Study from Four Agricultural Research Institutions in Developing Countries* (CAS-IP Rome 2009); C H Abo, J Abah, and N Danbaba (eds), *Proceedings of the National Workshop on Intellectual Property (IP): Issues, Rights and Obligations* (National Cereals Research Institute, Badeggi, Nigeria, 2010); Eric C Eboh, *Baseline Study of Nigeria's Intellectual Property Rights (IPRs) for Agricultural Research Technologies and Innovations Generated in National Agricultural Research Institutes and Universities, Revised National Synthesis Report* (West Africa Agriculture Productivity Programme and Agricultural Research Council of Nigeria, September 2013); Josephine Bosede Ayoola, Gbolagade Babalola Ayoola, and D O Chikwendu, 'An Assessment of Intellectual Property Rights in Nigeria Agriculture' (2014) 3(6) International Journal of Innovative Research and Development 337.

contribute to plant variety protection law-making in the Global South include trade agreements, regional associations, seed companies, the UPOV office lobbies, and civil society activism. Any one of the first four factors can influence a country to join or adopt the UPOV ‘plant breeders’ rights’ system, but the fifth factor contributes to countries designing creative *sui generis* plant variety protection systems.¹⁷⁸

Third, this thesis provides a novel TWAIL analysis of plant variety protection, and it also presents a multi-layered analysis of TWAIL. In applying TWAIL to plant variety protection, the thesis shows the utility of supplementing it with insights from regime complex to understand the intricate web of legal regimes regulating plant variety protection. Drawing from TWAIL and regime complex, this thesis proposes creative *sui generis* systems that pull together varied interests of the Third World as suited to Global South WTO members such as Nigeria.

The application of the three contributions to the Nigerian case study breaks new ground by uncovering *why* Nigeria does not have a plant variety protection system, *why* it ought to have one, and *how* it can design such system. Significantly, the thesis rejects the UPOV plant breeder’s rights system as ‘the single’ interpretation of *sui generis* under TRIPS as promoted by Europe and the US. It calls for Nigeria and other Global South countries to draw inspiration from creative *sui generis* systems such as those in place in India and Thailand, or the African Model Law.

1.6. Thesis structure

This thesis is divided into seven chapters including this introductory chapter and the conclusion. Chapter 2 explores the current situation in Nigeria concerning plant variety protection. This exploration helps to understand how the obligation to protect plant varieties applies to Nigeria and what type of plant variety protection system is best suited to Nigeria. The chapter begins with the international obligations Nigeria is signatory to, alongside relevant domestic institutions

¹⁷⁸ See analysis in Chapter 6.

responsible for implementing these obligations. Although Nigeria does not have a plant variety protection system, this chapter highlights the existing legislation regulating the registration and release of new plant varieties. Furthermore, the chapter investigates seed systems and farming practices. It finds that over 80 per cent of the farmers in Nigeria are small-scale farmers who mostly engage in traditional farming practices and source their seeds from the informal seed sector. Thus, the chapter argues that the plant variety protection system suited to Nigeria is one that takes into consideration the interests of both private seed companies and small-scale farmers. What exactly are the different options for the protection of plant varieties under TRIPS? Why should Nigeria consider choosing a creative *sui generis* system over patents or UPOV ‘plant breeders’ rights’? These questions and more are answered in Chapter 3.

Chapter 3 examines the different conflicting plant variety protection systems allowed under TRIPS, explaining the benefits and drawbacks of each of these systems for Nigeria. The systems examined are patents, UPOV plant breeders’ rights system, creative *sui generis* systems which incorporates legal principles suited to a country, or a combination of two or more of the aforementioned systems. Using the TWAIL lens, the chapter engages with the debates regarding each of these systems, particularly teasing out the divergences in the Global North and Global South debates. In answer to the central research question about the plant variety protection system best suited to Nigeria, the chapter finds that the *sui generis* system is best suited to Nigeria because it protects the interests of both small-scale farmers and private seed companies (commercial plant breeders). Indeed, Nigeria, as part of the African Group, along with other Global South WTO members, express preference for the *sui generis* option at the TRIPS Council. Nonetheless, Global South countries are increasingly relinquishing the choice offered under TRIPS by designing UPOV plant breeder’s rights systems. Consequently, Chapter 4 investigates factors that influence this proliferation of UPOV plant breeders’ rights systems in Africa.

Chapter 4 begins with the African Model Law, which embodies the African position on plant variety protection. Notably, reflecting the TWAIL approach of creating bottom-up alternatives, the African Group went a step further to construct an African Model Law which presents creative *sui generis* guidelines for African countries seeking to design plant variety protection systems. However, rather than drawing inspiration from the African Model Law, African organisations such as OAPI, and countries such as Kenya, South Africa, Tanzania, Tunisia, Morocco, and South Africa have gone the UPOV way. African organisations such as the African Regional Intellectual Property Organisation (ARIPO) and the Southern African Development Community (SADC) have also initiated the process of joining UPOV. Although Nigeria is not a member of any of these regional associations, understanding the rationale for UPOV's proliferation in Africa is useful, particularly because of the geographical closeness, similar cultures, and farming practices. In answer to the subsidiary research question about variations in plant variety protection systems in the Global South, this chapter finds that factors such as trade agreements, regional associations, pressure from seed companies, and UPOV office lobbies influence the proliferation of the UPOV plant breeders' rights system and disregard for the African Model Law in Africa. However, as will be seen in Chapter 5, not all Global South countries have succumbed to the pressure to join UPOV.

Chapter 5 investigates how and why India and Thailand translated the common Global South position – which advocated for a *sui generis* system – into domestic legislation. While India and Thailand experienced pressures to join UPOV similar to the African countries in Chapter 4, vibrant CSOs contributed to resisting UPOV lobbies and the successful design of creative *sui generis* systems. India and Thailand exemplify the TWAIL approach of implementing international laws in ways that address the needs and aspirations of marginalised peoples – in this case, small-scale farmers. This is because the Indian and Thai plant variety protection systems both incorporate provisions that reflect small-scale farmers' interests, such as the protection of farmers' varieties, as well as farmers' rights to save and reuse

seeds. As such, this chapter further contributes to answering the subsidiary research question about variations in plant variety protection systems in the Global South.

Chapter 6 revisits the Nigerian case study. The analyses in Chapters 2 to 5 reveal that plant variety protection is not simply a linear process. That is, there are a variety of factors that influence the introduction of national plant variety protection systems. Notably, the thesis finds that while India and Thailand were designing *sui generis* systems, Nigeria was under a strict military regime which did not prioritise the fulfilment of international obligations. Furthermore, although Nigeria has not experienced any of the factors that influence the proliferation of UPOV plant breeder's rights within Africa, such as trade agreements, regional associations, pressure from seed companies, and UPOV office lobbies, it also does not have vibrant CSOs that can push for a creative *sui generis* system in the country. While Nigeria does not have a plant variety protection system, the chapter unpacks the plant variety protection provisions in its IPC Bill. The analysis in this chapter contributes to answering the second central research question about how to introduce the proposed creative *sui generis* plant variety protection system suited to Nigeria.

Chapter 7 concludes the thesis by synthesising the main findings in Chapters 1 to 6. It further sets out recommendations and suggestions for further research.

Chapter 2

Background on Plant Variety Protection in Nigeria

As highlighted in Chapter 1, Nigeria had up to 1 January 2000 to implement its obligations to protect plant varieties under TRIPS.¹ To date, Nigeria does not have a plant variety protection system, and there does not seem to be any immediate consequence for missing this deadline. For one, no WTO member has taken Nigeria to the WTO Dispute Settlement Body for failing to fulfil its obligation. Nonetheless, considering its pending TRIPS obligations, this chapter provides a background on Nigeria vis-à-vis plant variety protection. Significantly, this chapter sets the scene for the further political economy analysis on plant variety protection in Nigeria covered in Chapter 6. This is because the specific political economy issues to analyse is uncovered after understanding Nigeria's realities, the plant variety protection system suited to the country, and the dynamics in the plant variety protection law-making discussed in Chapters 3 to 5. As such, this chapter begins to tell the Nigerian story by setting out its international obligations, existing legal framework for plant varieties, farming practices, and current agricultural policy.² Importantly, this chapter aims to contribute to answering the first central research question which concerns the type of plant variety protection system best suited to Nigeria.

¹ As a 'developing country' member of the WTO, Nigeria was entitled to a period of five years from the date TRIPS entered into force (1 January 1995) to fulfil its obligations. TRIPS, art 65.

² These background themes are derived from policy literature and commission reports on the implementation of Article 27.3(b) of TRIPS in the Global South, such as Dan Leskien and Michael Flitner, 'Intellectual Property Rights and Plant Genetic Resources: Options for a Sui Generis System' (Issues in Genetic Resources No 6, International Plant Genetic Resources Institute, June 1997) 69; Geoff Tansey, *Trade, Intellectual Property, Food and Biodiversity: Key Issues and options for the 1999 review of Article 27.3(b) of the TRIPS Agreement: A Discussion Paper* (Quaker Peace & Service London in association with Quaker United Nations Office 1999) 14; Dwijen Rangnekar, *Access to Genetic Resources, Gene-based Inventions and Agriculture* (Study Paper 3a, United Kingdom Commission on Intellectual Property Rights 2002) 32; N P Louwaars, R Tripp, D Eaton, V Henson-Apollonio, R Hu, M Mendoza, F Muhhuku, S Pal, and J Wekundah, *Impacts of Strengthened Intellectual Property Rights Regimes on the Plant Breeding Industry in Developing Countries: A Synthesis of Five Case Studies* (Report Commissioned by the World Bank, February 2005) 63-65 <https://www.iprsonline.org/resources/docs/LouwaarsCGN_Plants_05.pdf> accessed 28 June 2017; Carlos M Correa, *Plant Variety Protection in Developing Countries: A Tool for Designing a Sui Generis Plant Variety Protection System: An Alternative to UPOV 1991* (APBEBES 2015) 7.

Drawing from regime complex, this chapter finds that the overlapping treaties covering plant variety protection is reflected at the national level, as there are various national institutions with mandates to implement different elements of these treaties. Second, Nigeria's patent system prohibits patents for plant varieties. Despite intellectual property rights (IPRs) reform attempts, Nigeria does not have a *sui generis* plant variety protection system. However, it has laws that regulate the registration, release, and commercialisation of plant varieties. Yet, these laws do not fulfil the TRIPS obligations to protect plant varieties, as they are not IPRs laws. That is, they do not provide exclusive rights over the varieties for a specific duration. Third, although Nigeria does not have a plant variety protection system, it has a practice of granting private companies a 10-year moratorium to exclusively market new varieties.³ However, this moratorium is not enforceable because it is not backed by any Nigerian legislation. Fourth, the farming practices and seed system show that the type of plant variety protection system suited to Nigeria is one that balances the interests of both small-scale farmers and seed companies (commercial breeders').⁴ This is because while Nigeria's agricultural policy promotes a private sector-led agriculture sector, the TWAIL analytical lens applied to this background mapping shows that small-scale farmers not only save, reuse, exchange, and sell seeds, they also contribute to the informal seed sector.

³ Fieldwork interview with Zidafamor Ebiarede Jimmy, Deputy Director for Seed Production at the National Agricultural Seeds Council of Nigeria (Abuja, 2015) (transcript on file with author); Fieldwork interview with Yarama D Ndirpaya, Deputy Director and Program Manager of Natural Resource Management at the Agricultural Research Council of Nigeria (Abuja, 2015) (transcript on file with author).

⁴ While the public sector is an important contributor to the seed sector in Nigeria as seen later in 2.2 below, the focus of this thesis is small-scale farmers and seed companies (or commercial breeders). As such, the thesis does not address discussions about whether public institutions should be granted plant variety protection. For discussions about public institutions and plant variety protection, see for example, Mywish Maredia, Frederic Erbisich, Anwar Naseem, Amie Hightower, James Oehmke, Dave Weatherspoon, and Wolf Christopher, 'Public Agricultural Research and the Protection of Intellectual Property: Issues and Options' (1999) 2 (3 & 4) *AgBioForum* 247-252; Dwijen Rangnekar, 'Intellectual Property Rights and Agriculture: An Analysis of the Economic Impact of Plant Breeders' Rights' (Actionaid UK, March 2000) <https://www.actionaid.org.uk/sites/default/files/content_document/ipr.pdf> accessed 21 July 2017; The World Bank, *Intellectual Property Rights: Designing Regimes to Support Plant Breeding in Developing Countries* (Report No 35517-GLB, The World Bank, Agriculture and Rural Development Department, 2006) 35-44.

This chapter is structured as follows. Part I sets out Nigeria's obligations in relation to plant variety protection. It discusses the obligations in the context of national institutions with the mandates to implement them. Part II examines Nigeria's patent system, the release, registration, and commercialisation laws, as well as the practice of granting moratoriums. Part III explores the informal seed system, including farmers' varieties and traditional farming systems. Part IV assesses Nigeria's current agricultural policy which promotes private sector investments in agriculture. Overall, this background chapter illuminates Nigeria's current situation with regard to plant variety protection, thereby setting the scene for the entire thesis and contributing to answering the first central research question.

2.1. Nigeria: Plant Variety Protection Regimes

Nigeria is signatory to three treaties relevant to plant variety protection, namely TRIPS, the CBD, and the ITPGRFA.⁵ As noted in Chapter 1, Nigeria is a significant interlocutor for Africa and the Global South at the TRIPS Council and other international forums. For example, Nigeria was part of the 'Group of Ten' Global South countries actively involved in the TRIPS negotiations.⁶ During the TRIPS negotiations, the Nigerian delegate to the Brussels Ministerial Meeting – Senas J. Ukpanah, argued that the General Agreement on Trade and Tariffs (GATT) -WTO's predecessor, ought to be confined to trade-related issues and not deal with IPRs protection and enforcement, as the latter would impose an unbearable burden on Nigeria by stifling the country's aspiration towards access to technology.⁷ Similarly, Nigeria actively participated in pre-CBD meetings since

⁵ Nigeria signed the TRIPS on 15 April 1994, the CBD on 13 June 1992, and the ITPGRFA on 10 June 2002. Although Nigeria is party to TRIPS and the CBD, it is not party to the ITPGRFA as it is yet to ratify it.

⁶ See Chapter 1. The Group of Ten was led by Brazil and India. The other countries were Argentina, Cuba, Egypt, Nicaragua, Peru, Tanzania and Yugoslavia. Jane Bradley, 'Intellectual Property Rights, Investments, and Trade in Services in the Uruguay Round: Laying the Foundations' (1987) 23 *Stanford Journal of International Law* 57, 81; Peter Drahos, 'Developing Countries and International Intellectual Property Standard-Setting' (2002) 5(5) *Journal of World Intellectual Property* 765, 773.

⁷ Senas J Ukpanah, 'Statement at the Ministerial Level Meeting in Brussels' (1990) MTN.TNC/MIN (90)/ST/34.

the second Ad Hoc Working Group of Experts on Biological Diversity in 1990.⁸ Indeed, Nigeria was one of the countries that volunteered to undertake a biodiversity case study during the intergovernmental negotiations for the CBD.⁹ Despite Nigeria's active participation highlighted in the examples above, there is a striking disconnect between Nigeria's contributions at the international level and its government's actions at the national level. In other words, although Nigeria was vibrant in discussions leading to the conclusion of these international treaties, it has not translated this vibrancy to designing domestic legal frameworks for plant varieties.

This chapter shows that one reason the vibrant international activism has not translated to national plant variety protection legislation is the lack of synergy among the national institutions with mandates to implement different provisions in the plant variety protection regime. Three key institutions – the Federal Ministry of Agriculture and Rural Development (FMARD), Federal Ministry of Environment (FME), and Federal Ministry of Industry, Trade, and Investment (FMITI) – responsible for implementing obligations under the ITPGRFA, the CBD, and TRIPS are discussed below. While discussing these institutions, the consequences of not implementing the international obligations relevant to plant variety protection in Nigeria are also highlighted.

2.1.1. The Federal Ministry of Agriculture and Rural Development

The FMARD is responsible for coordinating agriculture and promoting rural development in Nigeria.¹⁰ Established in 1966 with a mandate to stimulate agricultural development in Nigeria, the FMARD oversees about 50 parastatals,

⁸ CBD, *Pre-CBD Meetings* <<https://www.cbd.int/history/>> accessed 06 June 2017; United Nations Environment Programme (UNEP), *Report of the Ad Hoc Working Group on the Work of its Second Session in Preparation for a Legal Instrument on Biological Diversity of the Planet* (2nd session, 19-23 February 1990) UNEP/Bio.Div.2/3 <<https://www.cbd.int/doc/meetings/iccbd/bdewg-02/official/bdewg-02-03-en.pdf>> accessed 06 June 2017.

⁹ The case studies were undertaken to get estimates of projected costs, benefits, and unmet needs for global biodiversity conservation and sustainable use. UNEP – Intergovernmental Negotiating Committee for a Convention on Biological Diversity, *Biodiversity Country Studies, Note by the Executive Director* (23 April 1992) UNEP/Bio.Div/N7-INC.5/3 2 ('Biodiversity Country Studies').

¹⁰ FMARD <<http://fmard.gov.ng/about/>> accessed 06 June 2017.

including agricultural agencies, agricultural research institutes, and federal colleges of agriculture.¹¹ As the FMARD covers agriculture and rural development, it is the national point of contact for the ITPGRFA.¹² However, the provisions of the ITPGRFA relevant to plant variety protection, including farmers' rights to save, reuse, exchange, and sell farm-saved seeds, are not legally binding in Nigeria because it has not ratified the ITPGRFA.¹³

Yarama Ndirpaya, Deputy Director and Program Manager of Natural Resource Management at the Agricultural Research Council of Nigeria (ARC�), the agency under the FMARD responsible for managing the agricultural research system in Nigeria, explains that:

Efforts were made to domesticate the treaty [ITPGRFA] in times past. I recall a time when the ratification documents were drafted, the then Honourable Minister was to deposit the ratification documents at the [Food and Agriculture Organisation] FAO office in Rome, but unfortunately all efforts to lay hands on the documents have proved abortive with his removal. We [the ARC�] have been trying to get the document, so that the upcoming Minister of Agriculture will be sensitised. It is the purview of the Federal Ministry of Agriculture and the Agricultural Research Council to ensure that Nigeria ratifies that treaty. Even though I know Nigeria in the last administration has been trying to reduce the number of treaties Nigeria is signatory to, Nigeria is working towards the ratification of the ITPGRFA.¹⁴

¹¹ Parastatals are organisations owned or controlled by national governments. The parastatals under the FMARD include 13 agencies, 17 agricultural research institutes, and 16 federal colleges of agriculture.

¹² Food and Agriculture Organisation of the United Nations (FAO), *International Treaty on Plant Genetic Resources for Food and Agriculture – Nigeria* <<http://www.fao.org/plant-treaty/countries/membership/country-details/en/c/359344/?iso3=NGA>> accessed 06 June 2017.

¹³ The opening paragraph of this part also highlights that although Nigeria has signed the ITPGRFA, it has not ratified it.

¹⁴ Fieldwork interview with Ndirpaya (n 3).

Two points come to the fore here. First, Nigeria's international activism on farmers' rights is not mirrored in the national institution with the mandate to implement it. As such, Nigeria does not have a national legislation on farmers' rights. Second, the absence of national legislation on farmers' rights is not particularly disturbing because Nigeria also does not have a plant variety protection system. Therefore, farmers are not prohibited from saving, reusing, and exchanging farm-saved seeds.¹⁵

2.1.2. The Federal Ministry of Environment

The FME coordinates environmental matters in Nigeria.¹⁶ It was established in June 1999 to harmonise fragmented environmental issues previously handled by different ministries.¹⁷ Accordingly, it seeks to cooperate with relevant stakeholders on environmental matters, such as other government ministries, departments, agencies, CSOs, the private sector, and international organisations.¹⁸ With its focus on environmental issues, the FME is the national focal point for the CBD.¹⁹ A key provision from the CBD relevant to plant variety protection is access and benefit sharing.²⁰ As discussed in Chapter 1, Global South actors including Nigeria

¹⁵ Farmers' rights will be discussed in detail as one of the components of a *sui generis* system in Chapter 3.

¹⁶ Federal Ministry of Environment (FME) <<http://environment.gov.ng/about.html>> accessed 06 June 2017.

¹⁷ *ibid.*

¹⁸ *ibid.*

¹⁹ CBD, *Nigeria – Overview* <<https://www.cbd.int/countries/?country=ng>> accessed 06 June 2017. The national focal point is the person or institution designated to represent a country at meetings of the CBD Conference of Parties (CBD-COP) and routine dealings with the CBD Secretariat. The dealings include activities such as communications, dissemination of information, representation at meetings, and facilitating national implementation of the CBD.

²⁰ Access and benefit sharing will be discussed in detail as one of the components of a *sui generis* system in Chapter 3. The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity (Nagoya Protocol) sets out a transparent legal framework for the implementation of access and benefit sharing under the CBD. As opposed to the CBD which leaves it open for contracting parties to negotiate access and benefit sharing agreements, the Nagoya Protocol establishes conditions for access to genetic resources and equitable benefit sharing. Nigeria signed the Nagoya Protocol on 1 February 2012, but it is yet to ratify it. The Nagoya Protocol was adopted at the 10th meeting of the CBD-COP in Nagoya, Japan on 29 October 2010. It entered into force on 12 October 2014.

advocated for access and benefit sharing principles to recognise and reward the use of plant genetic resources sourced from the Global South.²¹

Nigeria has an access and benefit sharing regulation – the National Environmental (Access to Genetic Resources and Benefit Sharing) Regulation 2009 (National Environmental Regulation). The National Environmental Regulation was prepared by the National Environmental Standards and Regulation Agency (NESREA), which is an agency under the FME. However, the National Environmental Regulation is not operational because the FME does not recognise it. FME officials assert that the FME does not endorse the regulation because NESREA went beyond its powers in drafting it.²²

John Onyekuru, the CBD national focal point contact and Deputy Director of Forestry Conservation at the FME, maintains that it is only the FME that is conferred with the powers and mandate to make access and benefit sharing laws.²³ Onyekuru explains that the FME is the national competent authority for the approval of applications for access to genetic resources in Nigeria, therefore these applications have to be made directly to the FME, not to one of its agencies.²⁴ This discord is a symptom of the lack of synergy amongst government institutions even within the same ministry.

Although Nigeria does not have an operational access and benefit sharing framework, national and international research institutes that collect plant genetic resources from across Nigeria do so with approval of the National Centre for Genetic Resources and Biotechnology (NACGRAB).²⁵ NACGRAB is the government agency responsible for genetic resources conservation and utilisation

²¹ See Chapter 1.

²² Fieldwork Interview with John Onyekuru, CBD National Focal Point Contact and Deputy Director for Forestry Conservation at the Federal Ministry of Environment of Nigeria (Abuja, 2015) (transcript on file with author).

²³ *ibid.*

²⁴ *ibid.*

²⁵ The NACGRAB is actually an agency under the Federal Ministry of Science and Technology (FMST)
<http://www.nacgrab.gov.ng/index.php?option=com_content&view=article&id=61&Itemid=53>
accessed 06 June 2017.

in Nigeria.²⁶ Plant materials collected during explorations by these research institutions are stored in the NACGRAB or the International Institute of Tropical Agriculture (IITA) gene banks.²⁷ Sunday Aladele, the Registrar of NACGRAB, explains that all materials collected and saved in the NACGRAB gene bank are saved with their full data, including the geographical source of origin.²⁸ Similarly, Michael Abberton, the head of the Genetic Resources Center of the IITA, explains that the IITA addresses access and benefit sharing by carrying out their exploration and collection with the national authority:

We collect everything with them [NACGRAB]. Then it comes to us [IITA]. We [IITA] would not collect in Nigeria or anywhere else without the consent of the national authority. The materials come to us under Standard Material Transfer Agreement [SMTAs] of the International Treaty on Plant Genetic Resources for Food and Agriculture. Then, it becomes part of our [IITA] collection, and becomes available for the whole world. We get the informed consent by operating with the national agency. We tell them [the farmers] right from the outset what we are doing, and we give them some compensation.... We disclose the origin and all the characteristics in line with SMTAs.²⁹

However, NACGRAB's approval only covers plant genetic resources collected by national and international research institutes. This means that other interested parties, including private companies, can informally collect plant genetic resources from Nigeria. Indeed, the group of small-scale farmers interviewed in Iddah Community in Nigeria's Kaduna State remarked that: 'people have come to take our seeds and put it in a container...' ³⁰ When asked further, these farmers were not

²⁶ *ibid.*

²⁷ IITA, a research for development organisation, is one of the 15 research centres in the Consultative Group on International Agricultural Research (CGIAR) Consortium. The IITA headquarters is in Oyo State, Nigeria.

²⁸ Fieldwork Interview with Dr Sunday Aladele, Registrar of NACGRAB (Ibadan, 2015) (transcript on file with author).

²⁹ Fieldwork interview with Michael Abberton, Head of the Genetic Resources Centre of IITA (Ibadan, 2015) (transcript on file with author).

³⁰ Fieldwork interview with farmers in Iddah Community (Kaduna, 2015) (transcript on file with author).

aware of access and benefit sharing issues. They were happy to freely give away their seeds (plant genetic resources), along with associated knowledge about the seeds.³¹ Considering Nigeria's large land mass covering 923,768 sq. km, its population of over 186 million people, the low level of awareness about access and benefit sharing amongst farmers, and the absence of an operational access and benefit sharing framework, it is easy to informally collect plant genetic resources from Nigeria.³² Kent Nnadozie rightly concludes that there are no official records or data of the private sector's collection of plant genetic resources from Nigeria.³³

Nonetheless, the FME has received applications for permits from a US pharmaceutical company and a Japanese research institute to access genetic resources from Nigeria.³⁴ Benedicta Falana, the CBD Access and Benefit Sharing national focal point contact in Nigeria, notes that as there is no formal procedure for granting access to genetic resources in Nigeria, applications are considered on an ad hoc basis.³⁵ So far, the Minister of Environment, who is the national competent authority under the CBD, has granted two tentative permits for access to genetic resources in Nigeria in 2002 and 2015, respectively.³⁶ However, the grounds on which these permits are granted are unclear, as there is no operational access and benefit sharing framework in the country.

³¹ *ibid.*

³² The World Bank, 'Nigeria: Population, Total (2016)'

<<https://data.worldbank.org/indicator/SP.POP.TOTL?locations=NG>> accessed 06 June 2017.

³³ Kent Nnadozie, 'Access to Genetic Resources in Nigeria' in Kent Nnadozie, Robert Lettington, Carl Bruch, Susan Bass, and Sarah King (eds), *African Perspectives on Genetic Resources: A Handbook on Laws, Policies and Institutions* (Environmental Law Institute 2003) 182.

³⁴ Fieldwork interview with Benedicta O Falana, CBD-ABS Primary National Focal Point Contact (Abuja, 2015) (transcript on file with author).

³⁵ *ibid.*

³⁶ *ibid.* Tentative permits granted so far: (1) to Immune Modulation Inc (Immune), a pharmaceutical company in the US. On 10 July 2002, permit was granted for Immune to carry out bioprospecting on a plant, i.e. *Hypostea rosea*; and (2) retrospective permit granted to the National Institute of Agro-biological Science, Ibaraki, Japan. On 6 August 2015, permit was granted for the use of an African Chironomid, i.e. *Polypendum vander planki*.

2.1.3. The Federal Ministry of Industry, Trade and Investment

The FMITI is responsible for coordinating the industrial, trade, and investment sectors in Nigeria.³⁷ It was restructured in 2011 to promote economic growth.³⁸ The commercial law department of the FMITI oversees Nigeria's Trademarks, Patents, and Designs Registry.³⁹ In addition, the FMITI's Department for Trade's Multilateral Trade Division has a WTO unit that focuses on WTO-related matters. Thus, the FMITI is responsible for implementing TRIPS provisions in Nigeria. As Nigeria does not have a plant variety protection system, IPRs for new plant varieties are unavailable in the country. Simeon Onyerikwu, the Senior Trade Officer at the WTO Department of the FMITI, notes that one factor that contributes to the absence of plant variety protection in Nigeria is its lack of national IPRs policy.⁴⁰ He explains that a national IPRs policy would shape Nigeria's IPRs architecture, including plant variety protection.⁴¹ In essence, while Nigeria was active in the TRIPS negotiations, this is not reflected in its IPRs policy and legislation at the national level.

Notably, the Nigerian delegation at the TRIPS Council has addressed concerns about plant variety protection in Nigeria. For example, the delegation explained at the TRIPS Council meeting from 5 to 7 March 2002 that Nigeria did not have a plant variety protection system at the time because it had only recently [in May 1999] transitioned from military rule to a civilian administration, and the military did not pay much attention to fulfilling international obligations.⁴² The delegates

³⁷ FMITI, *About Federal Ministry of Industry, Trade & Investment* <<http://www.fmiti.gov.ng/index.php/the-ministry/about-fmiti>> accessed 06 June 2017.

³⁸ *ibid.*

³⁹ The Trademarks, Patents, and Designs Registry is tasked with registering industrial property – trademarks, patents, and designs. It does not cover copyrights. Copyrights are registered in the Nigerian Copyright Commission, which is supervised by the Federal Ministry of Justice. Trademarks, Patents, and Designs Registry, Commercial Law Department, Federal Ministry of Industry, Trade, and Investment <<http://www.iponigeria.com/#/>> accessed 06 June 2017; Nigerian Copyright Commission <<http://www.copyright.gov.ng/index.php/about-us/about-the-commission>> accessed 06 June 2017.

⁴⁰ Fieldwork interview with Simeon Onyerikwu, Senior Trade Officer at the WTO Department of FMITI (Abuja, 2015) (transcript on file with author).

⁴¹ *ibid.*

⁴² WTO Council for Trade-Related Aspects of Intellectual Property Rights, Review of Legislation on 5-7 March 2002 (8 June 2004) IP/Q/NGA/1, IP/Q2/NGA/1, IP/Q3/NGA/1, IP/Q4/NGA/1, 2-3.

noted that with the return to civilian administration, the government had commenced efforts to enact TRIPS-compliant national legislation, including those in relation to protection of plant varieties.⁴³ In response to questions posed by the United States (US), the European Union (EU), Canada, Japan, and Switzerland regarding Nigeria's efforts to enact a TRIPS-compliant plant variety protection system, the delegates explained that the draft Bill on Plant Variety Protection, Farmers' and Breeders' Rights was at the drafting stage.⁴⁴ However, as explained in 2.2 below, the Bill was not passed into law.

The above discussions of the three main government ministries with mandates to implement treaties relevant to plant variety protection in Nigeria shows that the FMITI is the ministry that has the mandate to implement TRIPS obligations. While the FMARD and FME are responsible for implementing farmers' rights as well as access and benefit sharing principles, which are key components of a creative *sui generis* system. Notably, the FMARD, FME, and FMITI policies all state that they commit to collaborating with other government institutions to fulfil their respective policy mandates.⁴⁵ For example, the FMARD's Agriculture Promotion Policy (2016-2020) acknowledges the relationship between agriculture and other sectors such as industry and environment.⁴⁶ Thus, the FMARD commits to collaborating with ministries such as the FME and FMITI to meet its policy objectives.⁴⁷

While the FMARD, FME, and FMITI policy statements point towards coordination, in reality, these institutions are uncoordinated, particularly with

The other ways through which the military regime influenced the absence of a plant variety protection system in Nigeria will be seen in Chapter 6.

⁴³ *ibid.*

⁴⁴ *ibid.* 3.

⁴⁵ See for example, Federal Ministry of Agriculture and Rural Development (FMARD), *The Agriculture Promotion Policy (2016-2020): Building on the Successes of the ATA, Closing Key Gaps* (FMARD 2016) (*The Agriculture Promotion Policy*) <http://fmard.gov.ng/wp-content/uploads/2016/03/2016-Nigeria-Agric-Sector-Policy-Roadmap_June-15-2016_Final.pdf> accessed 17 July 2017; Federal Ministry of Environment (FME), *Nigeria: National Policy on the Environment Revised 2016* (FME, 2016).

⁴⁶ FMARD, *The Agriculture Promotion Policy* (n 45) 13.

⁴⁷ *ibid.*

regard to plant variety protection-related issues. Ruth Okediji neatly concludes that:

It is really at the domestic level that the coordination has to happen. It cannot happen multilaterally. But what you are seeing on the domestic ground is the reality that different agencies represent different international regimes. Environment [FME] does not go for intellectual property-related issues. Trade [FMITI] does not go for environment-related issues. Trade and Environment go to their respective international meetings, but come back with a different emphasis... There has to be an overarching normative framework within which each of these industries are working with.⁴⁸

Table 2.1: Key Government Ministries Relevant to Plant Variety Protection in Nigeria

Ministry	Departments/ Parastatals/Agencies
Federal Ministry of Justice (FMJ)	Nigerian Copyright Commission
Federal Ministry of Industry, Trade, and Investment (FMITI)	Trade Department Commercial Law Department – Trademarks, Patents and Designs Registry
Federal Ministry of Agriculture and Rural Development (FMARD)	Agricultural Research Council of Nigeria National Agricultural Seed Council National Agricultural Research Institutes
Federal Ministry of Environment (FME)	National Environmental Standards and Enforcement Agency
Federal Ministry of Science and Technology (FMST)	National Biotechnology Development Agency National Centre for Genetic Resources and Biotechnology National Office for Technology Acquisition and Promotion

Sources: The government ministries' websites

⁴⁸ Fieldwork interview Ruth Okediji (via Skype, 2015) (transcript on file with author).

2.2. Legislation Regulating Plant Varieties in Nigeria

To be clear, Nigeria does not have a plant variety protection system. That is, it does not provide IPRs for plant varieties either through a patent or *sui generis* system. In fact, Nigeria's Patents and Designs Act 1970 (PDA) expressly prohibits patents for plant varieties.⁴⁹ Although IPRs reform attempts have sought to introduce comprehensive IPRs legislation, including *sui generis* plant variety protection systems, these attempts have been largely unsuccessful. Nonetheless, Nigeria has two laws that regulate plant varieties, namely the National Crop Varieties and Livestock Breeds (Registration, etc.) Act 1987 (NCVLBA) and the National Agricultural Seed Act 1992 (NASA).⁵⁰ While these laws are not IPRs systems, they are noteworthy because they regulate the registration, release, and commercialisation of new plant varieties and seeds in Nigeria. Significantly, this thesis finds that the National Crop Varieties Registration and Release Committee established under the NCVLBA has a practice of granting private breeders of new varieties a 10-year moratorium to exclusively market new varieties released in Nigeria. This part discusses the abovementioned laws and practice.

2.2.1. The Patents and Designs Act

The only mention of plant varieties in Nigeria's IPRs regime is in its PDA. Section 1.1(a) of the PDA provides that an invention is patentable if it is 'new, results from an inventive activity and is capable of industrial application.'⁵¹ As will be seen in Chapter 3, these three requirements for patentability are similar to the provisions for patentability under TRIPS.⁵² However, patentable subject matter under the PDA differs from TRIPS because Section 1.1(b) of the PDA further provides that an invention that 'contributes to an improvement upon a patented invention' is

⁴⁹ The Patents and Designs Act (1970) (PDA) entered into force on 1 December 1971. PDA, ch P2.

⁵⁰ National Crop Varieties and Livestock Breeds (Registration, etc) Act (NCVLBA), Laws of the Federation of Nigeria (2004), ch N27; National Agricultural Seeds Act (NASA), Laws of the Federation of Nigeria (2004), ch N5.

⁵¹ PDA, s 1.1(a).

⁵² Conditions for patentability are set out under Article 27 of TRIPS. For discussions on patents in relation to plant varieties, see Chapter 3 of thesis.

patentable.⁵³ This provision covers ‘patents for improvements.’ As such, further improvements or developments of patented inventions are also patentable, even without the permission or cooperation of the original patent holder.⁵⁴ The PDA incorporates the ‘patents for improvements’ provision to incentivise indigenous inventors to develop or adapt foreign inventions to suit Nigerian conditions.⁵⁵ Nonetheless, patents on improvements are also required to fulfil the new, inventiveness, and industrial applicability requirements for patentability under the PDA.⁵⁶

Under Section 1.2 of the PDA, a new invention is one that ‘does not form part of the state of the art.’⁵⁷ That is, an invention that is not considered common knowledge. An invention that results from an inventive activity is one that ‘does not obviously follow from the state of the art.’⁵⁸ In other words, the invention should involve an inventive step that is not obvious to a person skilled in the art, while an invention is capable of industrial application ‘if it can be manufactured or used in any kind of industry, including agriculture.’⁵⁹ Here, the invention is required to demonstrate that it can be translated into a product or a process.⁶⁰ However, the PDA provides that patents cannot be validly obtained in respect of plant or animal varieties.⁶¹ As such, even if new plant varieties fulfil the patentability requirements above, they are not patentable.

The exclusion of patents for plant varieties in the PDA is drawn from Section 5 of the United International Bureau for the Protection of Intellectual Property Law

⁵³ PDA, s 1.1(b).

⁵⁴ United International Bureaux for the Protection of Intellectual Property (BIRPI), ‘Model Law for Developing Countries on Inventions’ (BIRPI Publication No 801(E), 1965) 19 (‘Model Law for Developing Countries on Inventions’).

⁵⁵ George Sipa-Adjah Yankey, *International Patents and Technology Transfer to Less Developed Countries: The Case of Ghana and Nigeria* (Avebury 1987) 212 (*International Patents and Technology Transfer to Less Developed Countries*).

⁵⁶ PDA, s 1.1(b).

⁵⁷ PDA, s 1.2(a).

⁵⁸ PDA, s 1.2(a).

⁵⁹ PDA, s 1.2(c).

⁶⁰ Rangnekar notes that this principle is to prevent the patenting of discoveries in the sciences. Dwijen Rangnekar, ‘Intellectual Property Rights and Agriculture: An Analysis of the Economic Impact of Plant Breeders Rights’ (n 4).

⁶¹ PDA, s 1.4(a).

Model Law for Developing Countries on Inventions (BIRPI Model Law), published in May 1965.⁶² The BIRPI Model Law explanatory note clarifies that the exclusion does not preclude the protection of new plant varieties by other IPRs systems, such as the ‘plant breeders’ rights’ system under the UPOV Convention.⁶³ This BIRPI Model Law provision is a reflection of the European position on plant variety protection as seen in Chapter 1. Apart from the provision on plant variety protection, the PDA in general is modelled on the BIRPI.⁶⁴ Sipa-Adjah Yankey notes that the modelling of the PDA on the BIRPI Model Law was not engendered by any national technology policy or plan because none existed at that time.⁶⁵ He explains that the structuring of the PDA on the BIRPI Model Law was influenced by the active participation of Nigeria’s representative (D. O. Egbue from the Federal Ministry of Commerce and Industry – now FMITI) in the pre-BIRPI Model Law Committee of Experts meetings.⁶⁶

The idea for the BIRPI Model Law originated in the 1963 Committee of Experts Study on Industrial Property Problems of Industrially Less Developed Countries that met in Geneva in 1963.⁶⁷ The Committee unanimously adopted a recommendation which provided ‘that BIRPI should undertake to prepare a draft

⁶² Section 5 of the BIRPI Model Law provides that ‘patents cannot be validly obtained in respect of: plant or animal varieties.’ The BIRPI was the predecessor of the WIPO and was established in 1893 after the two secretariats set up to administer the Paris Convention for the Protection of Intellectual Property 1883 and Berne Convention for the Protection of Literary and Artistic Works 1886 merged. BIRPI was originally based in Berne, Switzerland, but it moved to Geneva in 1960. As new states gained independence during the post-1945 decolonialisation period, some states such as Nigeria joined the BIRPI by signing one or both of the treaties it oversaw. For discussions on the BIRPI and new states or the Global South, see generally, Christopher May, *The World Intellectual Property Organisation: Resurgence and the Development Agenda* (Routledge 2007); Christopher May, ‘The World Intellectual Property Organization and the Development Agenda’ (2008) 22(1) *Global Society* 97; Ruth L Okediji, ‘The International Relations of Intellectual Property: Narratives of Developing Country Participation in the Global Intellectual Property System’ (2003) 7 *Singapore Journal of International and Comparative Law* 315. For the BIRPI Model Law, see BIRPI, ‘Model Law for Developing Countries on Inventions’ (n 54).

⁶³ The UPOV 1961 Convention was not yet in force in 1965 when the BIRPI Model Law was published. The UPOV 1961 Convention entered into force on 10 August 1968. BIRPI, ‘Model Law for Developing Countries on Inventions’ (n 54) 23.

⁶⁴ Yankey, *International Patents and Technology Transfer to Less Developed Countries* (n 55) 210.

⁶⁵ *ibid* 211.

⁶⁶ *ibid*. D O Egbue was the Acting Registrar (Commercial Legislation) of the Federal Ministry of Commerce and Industry in Lagos. BIRPI, ‘Model Law for Developing Countries on Inventions’ (n 54) 11-12.

⁶⁷ BIRPI, ‘Model Law for Developing Countries on Inventions’ (n 54) 11.

model law for the protection of inventions and technical improvement, taking into account the various existing systems, and accompanied by explanatory notes.’⁶⁸ BIRPI prepared the draft model law and commentary in early 1964 and submitted it to several intergovernmental and non-governmental international organisations, as well as to Global South and Global North members of the International Union for the Protection of Industrial Property.⁶⁹ The draft law and commentary were also submitted to the Model Law Committee, composed of representatives of 22 Global South countries, including Nigeria.⁷⁰ It is interesting to note that while the Model Law Committee was asked to discuss the provisions of the Model Law, it was not asked to decide whether or not the adoption of patent laws was desirable for Global South countries.⁷¹ Nonetheless, the PDA was the first patents and designs law in post-colonial Nigeria.⁷² Despite several IPRs reform attempts in Nigeria, the PDA has not been revised or amended since 1970; it is still in force to date.

Before examining the NCVLBA and NASA, a brief detour will be taken to explore the IPRs reform attempts in Nigeria. This is important because it provides insights into the absence of a *sui generis* plant variety protection system in the country.

⁶⁸ *ibid.*

⁶⁹ *ibid.*

⁷⁰ Apart from Nigeria, other Model Law Committee countries were Algeria, Argentina, Ceylon, Chile, Colombia, Dominican Republic, El Salvador, Haiti, India, Indonesia, Iran, Israel, Kenya, Mexico, Nicaragua, Sierra Leone, Sudan, Tanzania, Thailand, Uganda, and Venezuela.

⁷¹ BIRPI, ‘Model Law for Developing Countries on Inventions’ (n 54) 12.

⁷² Prior to the PDA, patent laws were introduced during the colonial era in Nigeria. The British colonial authorities introduced the first patent law in the Colony of Lagos with the enactment of Patent Ordinance No 17 of 1900. Subsequently, Patent Proclamation No 27 of 1900 and Patent Proclamation No 12 of 1902 were enacted for the Protectorates of Southern and Northern Nigeria, respectively. After the amalgamation of Southern and Northern Nigeria in 1914, these enactments were repealed and replaced by the Patent Ordinance No 30 of 1916 which was applicable to the whole of Nigeria. The 1916 Ordinance was repealed in 1925 and replaced by ‘The Registration of United Kingdom Patent Ordinance’. The Registration of United Kingdom Patent Ordinance of 1925 altered the patent application procedure in Nigeria. Persons desirous of obtaining patents in Nigeria had to apply to the United Kingdom (UK) first, and then register the patent in Nigeria afterwards. This patent system, save for a few alterations, remained in force until 1970 – a decade after Nigeria gained her independence. For discussions on the history of patent laws in Nigeria, see generally Gaius Ezejiofor, ‘The Law of Patents in Nigeria: A Review’ (1973) 9 *African Legal Studies* 39; Yankey, *International Patents and Technology Transfer to Less Developed Countries* (n 55); Owen T Adikibi, ‘The Multinational Corporation and Monopoly of Patents in Nigeria’ (1988) 16(4) *World Development* 511.

Intellectual Property Rights Reform Attempts

Nigeria commenced a review of its IPRs regime as far back as the 1980s, even before TRIPS entered into force.⁷³ At this time, Nigeria had three distinct IPRs laws – the Trade Marks Act 1965, the Copyright Act 1970, and the PDA. Of the three IPRs systems, only the Copyrights Act has undergone reforms. It has been reformed three times – in 1988, 1992, and 1998. Bankole Sodipo notes that the Nigerian copyright industry, including authors, publishers, composers, recording artists, and performing artists were responsible for pushing the copyright reforms.⁷⁴ In fact, artists united under the Performing Musicians Association of Nigeria (PMAN) organised a nation-wide protest march on 30 November 1988 to demand for copyright reform.⁷⁵ This lobbying strategy was effective, as the first amended copyright law was passed three weeks after, on 19 December 1988.

Unlike copyrights, attempts to reform trademark and patents laws have been unsuccessful.⁷⁶ The Nigerian Law Reform Commission (Commission), a parastatal under the FMJ, proposed an ‘all-embracing’ IP legislation to cover trademarks, patents, designs, and utility model certificates, as well as an industrial property office to administer this legislation.⁷⁷ This proposal, set out in a draft Industrial Property Bill in 1991, would have required merging the Trade Marks Act with the Patents and Designs Act.⁷⁸ The Commission explained that the proposed legislation would make industrial property laws more accessible in Nigeria, as

⁷³ The Federal Ministry of Justice (FMJ) was involved with the review of IPRs, particularly with copyright reforms. Bankole Sodipo, *Piracy and Counterfeiting, GATT, TRIPS and Developing Countries* (Kluwer 1994) 27 (*Piracy and Counterfeiting, GATT, TRIPS and Developing Countries*); Adebambo Adewopo, *According to Intellectual Property: A Pro-Development Vision of the Law and the Nigerian Intellectual Property Law and Policy Reform in the Knowledge Era* (Nigerian Institute of Advanced Legal Studies 2012) 46 (*According to Intellectual Property*).

⁷⁴ Sodipo, *Piracy and Counterfeiting, GATT, TRIPS and Developing Countries* (n 73) 27-28.

⁷⁵ *ibid* 28.

⁷⁶ Adewopo, *According to Intellectual Property* (n 73) 47.

⁷⁷ Recall from Chapter 1 that industrial property excludes copyrights. The Nigerian Law Reform Commission was established by the Nigerian Law Reform Commission Act 1979 and is responsible for progressive development and reform of substantive and procedural law in Nigeria. Nigerian Law Reform Commission, *Report on the Reform of Industrial Property Law* (Nigerian Law Reform Commission 1991) (*Report on the Reform of Industrial Property Law*) 6.

⁷⁸ Nigerian Law Reform Commission, *Report on the Reform of Industrial Property Law* (n 77) 6.

users would only have to refer to a single legislation.⁷⁹ Although extensive studies on the proposed legislation culminated in the preparation of a Working Paper and a National Workshop on industrial property law reforms, the Commission's proposal did not result in the anticipated legal reforms.⁸⁰ One reason for the lack of legal reform is that stakeholders in the patent and trademark industries, such as the Manufacturers Association of Nigeria (MAN) and the Nigerian Society of Engineers (NSE), were not as vigorously involved in lobbying for reforms as their counterparts in the copyright industry. While organisations such as MAN and NSE submitted comments or observations on the proposed IPRs Bill, they did not engage in further activism like PMAN did.⁸¹

The next notable phase of IPRs reform commenced in 2006. A National Intellectual Property Commission (NIPCOM) draft Bill was produced in late 2006 as an Executive Bill and as part of the federal government's Reform Agenda.⁸² The 2006 draft NIPCOM Bill built on the 1991 Industrial Property Bill, but it deviated from it by merging all existing IPRs laws, including copyrights, and also proposed the introduction of plant variety protection.⁸³ As such, the broad NIPCOM Bill covered copyrights, patents, designs, trademarks, service marks, animal breeders, farmers' rights, and plant varieties. The NIPCOM Bill further proposed a NIPCOM to

⁷⁹ *ibid* 6.

⁸⁰ The working paper consisted of two parts. Part A reviewed and discussed the IPRs laws and legal principles involved in these laws. It also includes recommendations to improve the laws. Part B contains the proposed draft Industrial Property Act, comprising of seven parts, namely: Part I - Administration of the Act, Part II - Patents, Part III - Utility Model Certificates, Part IV - Industrial Designs, Part V - Trade Marks and Other Marks, Part VI - Transfer of Industrial Property Rights, Part VII - Miscellaneous and Supplemental Issues. The working paper was discussed at the National Workshop on Industrial Property Reforms held in Tafawa Balewa Square from 12-15 February 1991. The Commission noted that attendance at the workshop was 'most encouraging and participation was very lively.' The working sessions were chaired by David Garrick - a legal practitioner, Hon Justice M B Belgore - Chief Judge at the Federal High Court, Hon Justice A G Karibi-Whyte - Justice of the Supreme Court, Dr Nylander - a legal practitioner, Hon Justice Anaemeka-Agu - Justice of the Supreme Court, Prof Uvieghara - Chairman of the Nigerian Copyright Council, Professor G A Olawoyin - a legal practitioner, and Chief P Kuye - a legal practitioner. Nigerian Law Reform Commission, *Report on The Reform of Industrial Property Law* (n 77) 8-19.

⁸¹ The Law Reform Commission notes that organisations such as MAN and NSE's response to the study paper on industrial property law reform was 'very encouraging.' Nigerian Law Reform Commission, *Report on The Reform of Industrial Property Law* (n 77) 7.

⁸² Adewopo, *According to Intellectual Property* (n 73) 49.

⁸³ *ibid*.

administer these different IPRs systems. Adebambo Adewopo points out that the Bill was designed to comply with international obligations, encourage investments in technological innovation, and promote domestic IPRs practice.⁸⁴ However, the draft NIPCOM Bill, like its 1991 counterpart, was unsuccessful. Adewopo argues that the ‘sheer lack of political will’ contributed to the failure of the NIPCOM Bill.⁸⁵ That is, the lack of prioritisation of IPRs matters on the legislative agenda.⁸⁶

While the lack of political will is one of the reasons for the failure of the NIPCOM Bill, it is argued that another significant reason for its failure is the aversion to a comprehensive IPRs body governing all IPRs systems – that is, copyrights and industrial property.⁸⁷

Shafiu Adamu Yuari, Registrar at the Trademarks, Patents, and Designs Registry, provides detailed insights on the aversion to the copyrights and industrial property merger:

There are internal contradictions amongst the different [IPRs] bodies, currently – the Nigerian Copyright Commission is different from the Trademark and Patent Registry... Government agencies act as rivals, so you find out that there is very stiff opposition for this merger. Whereas you have the copyright as a commission existing with a budget of its own, the patents and trademark registry is still a department within the Ministry [FMITI], and the Ministry [FMITI] will not be happy to give away a department to another body [Nigerian Copyright Commission]. So, this is also another aspect of it that is not widely written, but it has been there and it has been an issue that has been acting as a drag to the establishment of the commission [NIPCOM].⁸⁸

⁸⁴ *ibid* 49-50.

⁸⁵ *ibid* 50.

⁸⁶ *ibid*.

⁸⁷ Fieldwork interview with Shafiu Adamu Yuari, Registrar at the Trademarks, Patents, and Designs Registry of the Commercial Law Department of Nigeria’s Federal Ministry of Industry, Trade, and Investment (Abuja, 2015) (transcript on file with author).

⁸⁸ *ibid*.

Indeed, the proposed merger of copyrights and industrial property in Nigeria raises a key question. Which ministry would oversee the merged IPRs commission? This question is pertinent because the Nigerian Copyright Commission is currently under the FMJ, while the Trademarks, Patents, and Designs Registry is under the FMITI. The answer to this question may depend on the actors promoting the reforms. That is, if actors from the copyright industry or copyright commission promote the IPRs Bill, then the FMJ would be their preferred ministry. Conversely, if actors from the industrial property industry or the Trademarks, Patents, and Designs Registry promote the Bill, then the FMITI would be their preferred ministry. The point here is this: actors play a significant role in shaping a national IPRs system.

The subsequent Intellectual Property Commission Bill introduced in 2008, as well as other IPRs Bills have also been unsuccessful. These Bills have been promoted and sponsored by different government ministries, institutions, and bodies such as the FMITI, National Office for Technology Acquisition and Promotion (NOTAP), Intellectual Property Lawyers Association of Nigeria, Anti-Counterfeiting Collaboration of Nigeria, and the Section on Business Law of the Nigerian Bar Association. Notably, Nigeria has a recent Bill, the Industrial Property Commission (IPC) Bill, which was presented at its National Assembly in 2016.⁸⁹ While the outcome of this Bill cannot be predicted, it is unpacked in Chapter 6 particularly because certain key plant variety protection provisions that were in the previous IPRs Bills have been deleted from it.⁹⁰ Furthermore, the outcome of the IPC Bill may differ from its predecessors because actors from the pharmaceutical sector interested in patent reforms are involved in pushing for the IPC Bill.⁹¹

⁸⁹ The Bill was presented by Honourable Chime Oji Agu at the House of Representatives of the Nigeria's National Assembly on 8 June 2016. A Bill for an Act to Provide for the 'Establishment of the Industrial Property Commission of Nigeria, Repeal of Trademarks Act Cap 436, LFN 1990 and Patents and Designs Act, Cap 344, LFN 190 and make Comprehensive Provisions for the Registration and Protection of Trademarks, Patents and Designs, Plant Varieties, Animal Breeders and Farmers' Rights and for Related Matters' (HB 16.06.640, C 3399) <<http://placbillstrack.org/upload/HB640.pdf>> accessed 03 September 2017.

⁹⁰ See Chapter 6.

⁹¹ Honourable Chime Oji Agu, who presented the Bill at Nigeria's National Assembly, explained that it was the pharmaceutical sector that drew his attention to the importance of IPRs reforms. The author's personal communication with Honourable Chime Oji Agu (September 2017).

Three lessons from the attempts at IPRs reforms are as follows. First, the actors involved in the IPRs reform matter. For instance, PMAN's active lobbying contributed to copyright reforms. Second, IPRs is not a priority for the Nigerian government, as it does not even have an IPRs policy. Third, there is institutional rivalry between the Nigerian Copyrights Commission and the Trademarks, Patents, and Designs Registry. Each institution seeks to remain independent, yet proposed IPRs laws seek to merge them.

This section has mapped out the IPRs landscape in Nigeria vis-à-vis plant variety protection. Having established that Nigeria does not have a patent or *sui generis* plant variety protection system, the laws regulating the registration, release, and commercialisation of plant varieties and seeds are examined in the next two sections.

2.2.2. The National Crop Varieties and Livestock Breeds Act

The NCVLBA governs the certification, registration, and release of new crop varieties and livestock breeds in Nigeria.⁹² It establishes a national register for crop varieties and livestock breeds where names of old and new crop varieties and livestock breeds are permanently registered.⁹³ Furthermore, it establishes the National Crop Varieties Livestock Breeds Registration and Release Committee (Crop Varieties Release Committee), which is directly responsible for crop varieties and livestock breed validation, registration, naming, and release.⁹⁴

⁹² The schedule to the NCVLBA provides that it is 'An Act to introduce a register of the certification, registration and release of national crop varieties and livestock breeds and other matters related thereto.' It was amended on 29 September 2016 to increase penalties for breach of its provisions as set out in Section 8; NGN200 and NGN5,000 fines were increased to NGN100,000 and NGN500,000, respectively. Section 10 of the NCVLBA defines crop variety and livestock breed as crops or livestock breeds which are distinguishable from other kinds of the same crop or livestock because of their noticeable and stable characters.

⁹³ NCVLBA, s 1.

⁹⁴ NCVLBA, s 5. The Committee comprises of the following members: (i) a chairman who shall not be a person employed in the public service of the Federation or of a State to be appointed by the President; (ii) the Director, Federal Department of Agriculture; (iii) the Director of Agricultural Sciences (now Director, Bio-resources technology), FMST; (iv) the head of the Genetic Resources Unit (now Director/CEO NACGRAB), FMST; (v) the Director, National Seed Service; (vi) the Chairman, Committee of Deans of Faculties of Agriculture in Nigerian Universities; (vii) the President, Genetic Society of Nigeria; (viii) a representative of the Federal Agricultural Co-

Responsibilities of the Crop Varieties Release Committee include the following: receiving and processing applications for the registration, naming, and release of crop varieties; maintaining and storing genetic resources of the registered crop varieties in collaboration with NACGRAB; formulating policies on validation, registering, naming, and releasing new crop varieties; as well as maintaining a national register for all crop varieties released in Nigeria.⁹⁵ Registration of crop varieties is a pre-requisite for commercial transactions in Nigeria. Indeed, naming or releasing crop varieties in Nigeria without the written authority of the Registrar of the National Register for Crop Varieties and Livestock Breeds is an offence. For individuals, this is punishable by either a fine of up to NGN100,000, imprisonment, or both fine and imprisonment.⁹⁶ In like manner, corporate bodies can be fined for up to NGN500,000.⁹⁷

Before a crop variety is registered or released in Nigeria, it has to pass the distinctiveness, uniformity, and stability (DUS) requirements, alongside the value for cultivation and use (VCU) tests.⁹⁸ The DUS and VCU tests are set out in the 2016 Guidelines for Variety Registration and Release of New Crop Varieties in Nigeria.⁹⁹ These guidelines provide that a variety is distinct if it is clearly distinguishable from any other existing varieties in Nigeria. It is uniform if

ordinating Unit; (ix) two experienced breeders appointed on their personal merit by the Minister; (x) one large-scale crop farmer appointed on his personal merit by the Minister; and (xi) two general managers representing two River Basin Development Authorities from different ecological areas in rotation appointed by the Minister. Two further committee members were subsequently included: (xii) the Executive Secretary, ARCN; and (iv) the Director-General, National Biotechnology Development Agency (NABDA) (see Guidelines for Registration and Release of New Crop Varieties in Nigeria, 2016).

⁹⁵ NCVLBA, ss 5 and 6.

⁹⁶ NCVLBA, ss 2 and 8. The Registrar is the head of the Genetic Resources Unit of the FMST or his representative.

⁹⁷ *ibid.*

⁹⁸ NACGRAB, *Guidelines for Registration and Release of New Crop Varieties in Nigeria* (NACGRAB 2016) 8-9 (*Guidelines for Registration and Release of New Crop Varieties in Nigeria*). The DUS requirements are drawn from the UPOV Convention. Apart from the DUS and VCU tests, other factors the Variety Release Committee consider before registering and releasing new varieties are: whether the variety is not detrimental to human or animal health; that the name of the variety is not likely to be confused with a variety previously registered; that the name is not likely to offend the public; that the variety meets the variety purity standard established by the International Seed Testing Association (ISTA) for a variety of that specie; and that the new variety has superior traits over existing farmers' varieties or varieties registered in Nigeria.

⁹⁹ NACGRAB, *Guidelines for Registration and Release of New Crop Varieties in Nigeria* (n 98) 8-9.

individual varieties remain sufficiently uniform at the same growth stages in expression of their characteristics. Finally, it is stable if the genetic traits of the new variety remain stable through generations.¹⁰⁰

The DUS test is used to assess novelty and the botanical description of new varieties.¹⁰¹ Applications for new varieties are compared with similar existing varieties where (i) agronomic characteristics, such as yield, maturity date, and height, (ii) morphological characteristics, such as colour, shape, and size, and (iii) physiogenetical characteristics, such as tolerance to pest and disease, are evaluated at designated DUS testing sites for at least two years.¹⁰² Meanwhile, VCU tests ensure that crops registered as new varieties in Nigeria are beneficial to farming and industrial communities.¹⁰³ VCU tests are undertaken to assess (a) adaptation and stability of crop varieties across varied environments, (b) agronomic performance, (c) reaction to pests and diseases, and (d) resistance or tolerance to abiotic stresses of the new crop varieties in comparison with existing varieties.¹⁰⁴ Niels Louwaars and Francois Burgaud note that the VCU testing system is generally meant to support the use of improved varieties in a country.¹⁰⁵

To ascertain whether a plant variety meets the DUS and VCU tests, three trials are conducted, i.e. on-station, multi-locational, and on-farm trials.¹⁰⁶ The on-station trial – which can take more than a year – is conducted by the breeder of the new variety in the research institute or institution where the variety was developed.¹⁰⁷ In the on-station trial, the preliminary yield trial is carried out on the applicant's varieties along with the existing varieties. The applicant's varieties are given to entomologists or pathologists to study their reaction to pests and diseases. Food

¹⁰⁰ *ibid* 8.

¹⁰¹ *ibid*.

¹⁰² *ibid*.

¹⁰³ *ibid*.

¹⁰⁴ *ibid*.

¹⁰⁵ Niels Louwaars and Francois Burgaud, 'The Evolution of Registration Systems with a Special Emphasis on Agrobiodiversity Conservation' in Michael Halewood (ed), *Farmers' Crop Varieties and Farmers' Rights: Challenges in Taxonomy and Law* (Earthscan from Routledge 2016) 200.

¹⁰⁶ NACGRAB, *Guidelines for Registration and Release of New Crop Varieties in Nigeria* (n 98) 9.

¹⁰⁷ *ibid*.

quality and post-harvest traits are evaluated, and the DUS tests are also carried out. Only varieties that pass this stage are recommended for multi-locational trial. Multi-locational trials are carried out for at least two years across different agro-ecological zones in Nigeria or at several appropriate locations in case the variety is bred for a particular agro-ecology.¹⁰⁸ During the multi-locational trial, the VCU test is examined. These include adaptability, stability, agronomic performance, and resistance or tolerance to biotic and abiotic stresses. It must be carried out in not less than 10 testing sites per year for comparison. Lastly, on-farm trials are used to test a new variety on a farmer's field. The on-farm trials are carried out to investigate farmers' perceptions about the applicant's variety, such as whether farmers would accept the new varieties, whether the new varieties are better than existing varieties, and whether the new varieties can be adaptable.¹⁰⁹ This trial is carried out on a farmer's field for a year or a growing season. Data gathered for a period of one year from at least 10 farmers' fields across different agro-ecology is required to fulfil this step.¹¹⁰

To date, there are 586 released and registered varieties in Nigeria.¹¹¹ A high yielding cassava (NICASS 1) developed by Dr. S K Hahn from IITA was the first released variety registered in 1991.¹¹² None of these varieties are from small-scale farmers because the DUS requirements and VCU tests are too stringent for small-scale farmers' varieties to pass. Thus, small-scale farmers are excluded from the registration and release of new varieties under the current regulatory framework in Nigeria. Indeed, the Guidelines for Registration and Release of New Crop Varieties in Nigeria expressly exclude small-scale farmers in its list of actors that can

¹⁰⁸ *ibid.*

¹⁰⁹ *ibid.*

¹¹⁰ However, for perennial or long gestation crop species (such as cocoa, oil palm, rubber, mango, citrus, etc.), the Guidelines recommend that the multi-locational and on-farm trials should be combined through a farmer's participatory varietal selection. A minimum of two years' production data in addition to on-station data should be presented for registration and release of the proposed varieties.

¹¹¹ NACGRAB, *Varieties Released Catalogue*

<http://www.nacgrab.gov.ng/images/Varieties_Released_Catalogue.pdf> accessed 21 February 2017.

¹¹² *ibid.*

develop a new variety for registration and release in Nigeria.¹¹³ Only National Agricultural Research Institutes (NARIs) in Nigeria, universities in Nigeria, the Consultative Group on International Agricultural Research Centres (CGIAR), private seed companies, and non-governmental organisations registered in Nigeria can release new crop varieties.¹¹⁴

The NCVLBA discussed in this section, and NASA which is discussed in the next section, were both established through technical assistance from the FAO and the World Bank.¹¹⁵ The FAO provided technical assistance from 1975 to 1990 to introduce a formal seed system in Nigeria, while the World Bank provided assistance from 1991 to 1997 to further develop the formal seed system through the National Seed and Quarantine Project (NSQP).¹¹⁶ Interestingly, similar formal seed systems were also set up around Africa with the support of the FAO and the World Bank starting from the 1960s and 1970s.¹¹⁷ The Genetic Resources Action International Network (GRAIN) notes that the intention for the establishment of these seed laws was to remove trade barriers, encourage farmers to purchase certified seeds, and ultimately facilitate private sector involvement in the seed industry.¹¹⁸ Indeed, the World Bank Group NSQP Implementation Completion

¹¹³ NACGRAB, *Guidelines for Registration and Release of New Crop Varieties in Nigeria* (n 98) 13-14.

¹¹⁴ *ibid.*

¹¹⁵ The World Bank, WAAPP/PPAAO and Agricultural Research Council, *Innovating the Nigerian Agricultural Seeds Sector: A Proposed Action Plan for WAAPP - Nigeria* (jointly developed by Nigerian Agricultural Seeds System Stakeholders through the WAAPP-Nigeria Task Force on Agricultural Seeds, May 2013) 11

<<http://waapp.gov.ng/images/InnovatingtheNigeriaAgriculturalSeedsSector.pdf>> accessed 14 June 2017 (*Innovating the Nigerian Agricultural Seeds Sector*); Context Network and Sahel Capital, *Nigeria Early Generation Seed Study: Country Report* (United States Agency International Development and Africa Lead II, August 2016) 14 <<http://www.africaleadfft.org/wp-content/uploads/2016/09/Nigeria-EGS-Study-Final-Report-August-2016.pdf>> accessed 14 June 2017 (*Nigeria Early Generation Seed Study*). NCVLBA (Decree No 33 (14 October 1987) and NASA (Decree No 72 (23 November 1992) were both decrees promulgated by the Federal Military Government of Nigeria.

¹¹⁶ *ibid.*

¹¹⁷ Similar seed laws were also introduced in other parts of the Global South, particularly in Asia and Latin America. GRAIN, 'Africa's Seed Laws: Red Carpet for the Corporations' (Seedling, July 2005) 28

<<https://www.grain.org/article/entries/540-africa-s-seeds-laws-red-carpet-for-corporations>> accessed 14 June 2017.

¹¹⁸ GRAIN, 'Africa's Seed Laws: Red Carpet for the Corporations' (n 117) 28.

Report on Nigeria records the promotion of private sector seed development as one of its achievements.¹¹⁹

2.2.3. The National Agricultural Seed Act

NASA complements the NCVLBA by establishing the National Agricultural Seed Council (Seed Council) to generally oversee the seed sector.¹²⁰ The Seed Council is responsible for proposing seed programmes and policies, advising the national research system on seed demand and farmers' needs, as well as encouraging the establishment of seed companies in Nigeria.¹²¹ In addition, the Seed Council supervises activities of the Crop Variety Registration and Release Committee and other seed committees, including the Seed Standards Committee and the Seed Industry and Skill Development Committee.¹²² As seen above, the Crop Variety Registration and Release Committee is responsible for the registration and release of crop varieties.¹²³ The Seed Standards Committee makes recommendations to the Seed Council on seed standards and procedures, while the Seed Industry and Skill Development Committee makes recommendations to the Seed Council on matters related to skill development in the seed industry.¹²⁴ In essence, the Seed Council and the Seed Committees established under NASA collaborate to govern the national seed system.

¹¹⁹ World Bank Implementation Completion Report. The World Bank Group, 'Implementation Completion Report (ICR) Review – National Seed and Quarantine Project' (prepared by Wilfred V Candler, 2 March 1998)

<<http://lnweb90.worldbank.org/oed/oeddoclib.nsf/DocUNIDViewForJavaSearch/8525679B0071774D8525659200528218?OpenDocument>> accessed 14 June 2017.

¹²⁰ The NASA provides that the Chairman of the Seed Council is the Minister of Agriculture and Rural Development, while the Permanent Secretary of the FMARD is the Vice Chairman. Other Council members include IITA representatives, four representatives from the State Ministries of Agriculture or State Seed Co-ordination Committee representatives, four representatives from the Nigerian Seed Industry, one representative from the Federal Ministry of Finance, one representative from a private financial lending institution, and one representative from the department of plant breeding and seed technology in a Nigerian university. NASA, s 2.

¹²¹ NASA, s 3.

¹²² *ibid.*

¹²³ See 2.2.3 above and NASA, s 7.

¹²⁴ NASA, ss 8-9.

NASA provides for formal registration as a condition for producing, processing, and marketing seeds for commercial purposes.¹²⁵ Only registered seed production companies, seed enterprises on contract for seed companies, breeder seed production agencies, foundation seed growers, enterprise seed processors, and seed dealers are licensed to produce and market seeds commercially in Nigeria.¹²⁶ Other than those registered, no one – such as a small-scale farmer – is permitted to produce, process, or market seeds for commercial purposes.¹²⁷ However, Section 22.2 of NASA states that the prohibition does not apply to anyone growing and delivering seeds directly to others without monetary consideration, or to non-commercial sowing of seeds on personal farms.¹²⁸ In other words, while small-scale farmers are prohibited from producing, processing, or marketing seeds for commercial purposes, they are not precluded from engaging in non-commercial activities with seeds.

In particular, three categories of seeds of released varieties are subject to seed certification in Nigeria: breeders' seeds, foundation seeds or inbred lines, and certified seeds.¹²⁹ NARIs produce the breeder seeds.¹³⁰ The breeder seeds are sourced from research institutes in small quantities. The seed certification officers of the Seed Council assess the breeder seed to ensure that it possesses the required agronomic qualities. Next, the breeder seed is passed on to the National Seed Service (NSS) unit of the Seed Council which produces the foundation seeds. The NSS unit of the Seed Council produces the foundation seed 'in line with prescribed procedure and standards for each type of seed.' The certification officer ensures that these standards are followed. The Seed Council passes the foundation seed on to the agricultural development projects (ADPs) and private seed companies.¹³¹

¹²⁵ NASA, s 22.

¹²⁶ NASA, s 21.

¹²⁷ NASA, s 22.1.

¹²⁸ NASA, s 22.2.

¹²⁹ NASA, s 14.

¹³⁰ This section is developed from the author's fieldwork interview with Jimmy (n 3).

¹³¹ ADPs were launched in Nigeria to increase agricultural production by providing seed extension services. The funding for ADPs was initially derived from the World Bank, federal government, and state governments (66 per cent, 20 per cent, and 14 per cent, respectively). The ADPs started in 1975 with pilot projects in three local government areas in Northern Nigeria: Funtua, Gusau, and Gombe. By 1989, ADPs had extended to all states in Nigeria. ADPs exist in all the 36 states of

The ADPs and private seed companies produce certified seeds on their farms or through contract growers. The certified seeds are then sold or distributed to the farmers through farm service centres, cooperatives, and ADPs. However, this process has been liberalised. Private seed companies can obtain breeders' seeds directly from NARIs and international agricultural research centres to produce certified seeds through an out-growers scheme.¹³² Research institutes can also produce foundation seeds for crops through their designated out-growers.

Nigeria, but they are mainly funded by the state governments. The World Bank Group, 'Agricultural Development Projects in Nigeria' (Independent Evaluation Group, The World Bank Group) <<http://lnweb90.worldbank.org/oed/oeddoclib.nsf/DocUNIDViewForJavaSearch/FE7BA13642E3E0D7852567F5005D85CF>> accessed 15 June 2017; Daniel S Ugwu, 'Contributions of Agricultural Development Programmes (ADPs) to Rural Livelihood and Food Security in Nigeria' (2007) 2(4) *Agricultural Journal* 503-510 <<http://docsdrive.com/pdfs/medwelljournals/aj/2007/503-510.pdf>> accessed 15 June 2017.

¹³² Fieldwork interview with Jimmy (n 3).

**Table 2.2: Selected (National and International) Agricultural Research
Institutes: Nigeria**

	Research Institute	Selected Mandate Crop
1	National Cereals Research Institute, Badeggi	Rice, beniseed, and soybean
2	National Root Crops Research Institute, Umudike	Cassava, yam, ginger and potato
3	Institute for Agricultural Research, Samaru	Cowpea, groundnut, and maize
4	Institute for Agricultural Research and Training, Ibadan	Maize and kenaf
5	Lake Chad Research Institute	Wheat, barley, and millet
6	National Horticultural Research Institute, Ibadan	Fruits, vegetables, and ornamental plants
7	National Institute for Oil-Palm Research, Benin	Oil palm, coconut, and ornamental palms
8	Cocoa Research Institute of Nigeria, Oyo	Cocoa, kola, and cashew
9	Rubber Research Institute, Benin	Rubber and latex-producing plants
10	International Institute of Tropical Agriculture, Ibadan	Cassava, yam, and cowpea
11	International Crops Research Institute for the Semi-Arid Tropics, Kano	Cowpea, millet, and sorghum
12	Africa Rice, Ibadan	Rice

Sources: Agricultural Research Council of Nigeria and International Research Institutes' websites

Until the mid-1980s, breeding new varieties was exclusively undertaken by the public sector.¹³³ However, the establishment of NCVLBA and NASA inspired private companies' participation in the seed sector. The seed laws and the institution of the formal seed sector led to the establishment of private seed companies in Nigeria starting from the 1980s, including UAC Seed (Nigeria) Ltd., Pioneer Seed, UTC Seed Ltd., Ag-Seed Nigeria Ltd., and Temperance Seed Nigeria Ltd.¹³⁴ However, by the 1990s to 2000s, these companies liquidated or pulled out due to small-scale farmers' low demand for improved seeds from the formal seed sector.¹³⁵

As will be seen below, small-scale farmers in Nigeria rely on the informal seed sector.¹³⁶ However, the number of registered private seed companies has gradually increased over the years. From 13 in 2011, the number of registered seed companies in Nigeria had increased to 134 in 2014.¹³⁷ One reason for this surge, particularly from 2011, was the introduction of the Agricultural Transformation Agenda (ATA) that year, which promoted the use of improved seeds and private sector investment in agriculture.¹³⁸ Private – national and multinational – seed companies currently operating in Nigeria include DuPont-Pioneer, Maslaha, Monsanto, Premier Seeds, Seedco, Nagari Seeds, and Syngenta.¹³⁹ To further incentivise private sector participation in the seed sector, a moratorium is granted for new varieties released in Nigeria, as will be seen below.

¹³³ P Kormawa, E Okorji, and R Okechukwu, *Assessment of seed sub-sector policy in Nigeria* (International Institute of Tropical Agriculture 2002) 29-30.

¹³⁴ The World Bank, WAAPP/PPAAO and Agricultural Research Council, *Innovating the Nigerian Agricultural Seeds Sector* (n 115) 11.

¹³⁵ Jeffery W Bentley, Olupomi Ajayi, and Kehinde Adelugba, 'Nigeria: Clustered Seed Companies' in Paul Van Mele, Jeffery Bentley, and Robert G Guei (eds), *African Seed Enterprises: Sowing Seeds of the Future* (FAO, AfricaRice Center, and CAB International 2011) 50; The World Bank, WAAPP/PPAAO and Agricultural Research Council, *Innovating the Nigerian Agricultural Seeds Sector* (n 115) 11.

¹³⁶ See discussion on the informal seed system in 2.3 below.

¹³⁷ Bentley et al, 'Nigeria: Clustered Seed Companies' (n 135) 39; National Agricultural Seeds Council, *Annual Reports: 2014*

<http://seedcouncil.gov.ng/uploads/2017/02/2014_annual_report.pdf> accessed 14 June 2017.

¹³⁸ FMARD, 'Agricultural Transformation Agenda 2011.' Nigeria's current agricultural policy is discussed in 2.4 below.

¹³⁹ National Agricultural Seeds Council, *Annual Reports: 2014* (n 137).

2.2.4. Plant Variety Protection: In Practice

Although Nigeria does not have a plant variety protection system, it has a home-grown system of rewarding private breeders' research and investment. Yarama Ndirpaya, Deputy Director and Program Manager for Natural Resource Management at the ARCN, explains that:

We operate two systems right now in this country. The publicly bred varieties that are bred and developed by public institutions, those are considered as public goods. Those varieties are open for everyone to use. But presently, we also have a number of private companies coming up to release varieties in Nigeria. Incidentally, I am a member of the technical committee of the Crop Variety Release Committee of Nigeria. What we have been doing in the committee so far is when a company develops a new variety, they are given a moratorium for about 10 years to market that material solely by them. No one else is allowed to market it. After that, it would go into public domain. In terms of varieties developed by public institutions, they are public goods.¹⁴⁰

The above statement shows that while private companies are not granted IPRs for new varieties, the Crop Variety Release Committee of Nigeria grants them a 10-year moratorium, during which they have the exclusive rights to market the variety. While the moratorium is akin to an IPRs system, it is not an IPRs system because it is not entrenched in any national IPRs legislation. As such, it remains unenforceable in court. As discussed in Chapter 1, IPRs are *legally enforceable* rights granted by national authorities.¹⁴¹ As the moratorium is neither provided under any national IPRs legislation nor legally enforceable, it fails to qualify as an IPRs system. Zidafamor Jimmy, Deputy Director for Seed Production in the National Agriculture Seed Council (NASC) who is also a member of the technical

¹⁴⁰ Fieldwork interview with Ndirpaya (n 3).

¹⁴¹ See 1.1 in Chapter 1.

committee of the Crop Variety Release Committee, rightly points out that the moratorium is ineffective:

Nigeria does not have an IPRs system for plant varieties. Even if a moratorium for the private companies exists, this cannot be enforced because if someone unlawfully sells or uses the variety, you cannot take the person to court or enforce your rights because the moratorium is not provided or written in a legal document.¹⁴²

To close this part, four points that emerge from the analysis of laws and practice regulating new plant varieties in Nigeria are as follows. First, Nigeria's requirements for registration and release of varieties draw inspiration from the UPOV system, albeit with some exceptions. To reiterate, the registration and release provisions are not an IPRs system. They simply establish conditions for the introduction of new varieties in the formal seed system. Second, private companies that release new varieties have a moratorium to solely market the varieties, but this moratorium is unenforceable because it is not backed by law. Third, only released, registered, and certified varieties are officially commercialised under the NCVLBA and NASA. As such, the seed laws institutionally marginalise the informal seed system, which provides over 90 per cent of the seeds requirements in Nigeria.¹⁴³ Indeed, Michael Halewood and Isabel Lapena conclude that seed laws are generally 'developed with the market for formally bred seed in mind, not seeds of varieties developed and managed by local farmers over generations.'¹⁴⁴

¹⁴² Fieldwork interview with Jimmy (n 3).

¹⁴³ The informal seed system is discussed in 2.3 below. It is important to note however that this percentage varies depending on the crop. Small-scale farmers tend to purchase improved varieties of grains more than improved varieties of root and tuber crops, because planting materials for root and tuber crops are easily recyclable. As such, there has been minimal demand for, or development of, root and tuber varieties. The World Bank, WAAPP/PPAAO and Agricultural Research Council, *Innovating the Nigerian Agricultural Seeds Sector* (n 115) 11; Context Network and Sahel Capital, *Nigeria Early Generation Seed Study* (n 115) 13-14; K O Oyekale, 'Growing an Effective Seed Management System: A Case Study of Nigeria' (2014) 3(2) *Journal of Agricultural and Environmental Sciences* 345, 345 ('Growing an Effective Seed Management System').

¹⁴⁴ Michael Halewood and Isabel Lapena, 'Farmers' Varieties and Farmers' Rights: Challenges at the Crossroads of Agriculture, Taxonomy and Law' in Michael Halewood (ed), *Farmers' Crop Varieties and Farmers' Rights: Challenges in Taxonomy and Law* (Earthscan 2016) 6 ('Farmers Varieties and Farmers' Rights').

The next part discusses the informal seed system and small-scale farming practices in Nigeria.

2.3. Informal Seed System and Small-Scale Farming Practices in Nigeria

The informal seed system is largely unregulated and flexible.¹⁴⁵ It encompasses locally organised seed selection, production, and diffusion methods.¹⁴⁶ Farmers, farming communities, commodity groups, CSOs, and local traders are the main actors in Nigeria's informal seed system. Farmers select, save, reuse, exchange, and sell seeds. These farmers' seeds or varieties are sourced from farmers' harvests, exchanges with other farmers, and purchases from local markets.¹⁴⁷ Using traditional or local knowledge, farmers broadly adopt processes similar to breeders' processes in the formal system, such as seed selection, multiplication, dissemination, and storage.¹⁴⁸ However, farmers' varieties are not registrable under the NCVLBA because they do not meet the DUS conditions. Nonetheless, it is important to examine the informal seed system and farmers' varieties in Nigeria

¹⁴⁵ FAO, *Seed Security Assessment in North Eastern States of Nigeria* (FAO 2016) 10 (*Seed Security Assessment in North Eastern States of Nigeria*).

¹⁴⁶ *ibid.*

¹⁴⁷ *ibid.* Recall that farmer seeds are often referred to as landraces, mixed races, farmers' varieties, local varieties, or traditional varieties. For detailed discussions on farmers' varieties and informal seed systems generally, see Conny J M Almekinders and Niels P Louwaars, *Farmers' Seed Production: New Approaches and Practices* (Intermediate Technology 1999); Conny J M Almekinders and Niels P Louwaars, 'The Importance of the Farmers' Seed Systems in a Functional National Seed Sector' (2002) 4(1-2) *Journal of New Seeds* 15; Oliver T Coomes, Shawn J McGuire, Eric Garine, Sophie Cailon, Doyle McKey, Elise Demeulenaere, Devra Jarvis, Guntra Aistara, Adeline Barnaud, Pascal Clouvel, Laure Emperaire, Selim Louafi, Pierre Martin, Francois Massol, Marco Pautasso, Chloe Violon, and Jean Wencelius, 'Farmer Seed Networks make a Limited Contribution to Agriculture? Four Common Misconceptions' (2015) 56 *Food Policy* 41; Shawn McGuire and Louise Sperling, 'Seed Systems Smallholder Farmers Use' (2016) 8(1) *Food Security* 179; Jeremy Cherfas, 'Technical Challenges in Identifying Farmers' Varieties' in Michael Halewood (ed), *Farmers' Crop Varieties and Farmers' Rights: Challenges in Taxonomy and Law* (Routledge 2016) 27-42; Carlo Fadda, 'The Farmers' Role in Creating New Genetic Diversity' in Michael Halewood (ed), *Farmers' Crop Varieties and Farmers' Rights: Challenges in Taxonomy and Law* (Routledge 2016) 43-55.

¹⁴⁸ Traditional or local knowledge here refers to age-long knowledge forms used in farming communities. On traditional knowledge in agriculture generally, see Naomi Roht-Arriaza, 'Of Seeds and Shamans: The Appropriation of the Scientific and Technical Knowledge of Indigenous and Local Communities' (1996) 17 *Michigan Journal of International Law* 917; Chidi Oguamanam, 'The Protection of Traditional Knowledge: Towards a Cross-Cultural Dialogue on Intellectual Property Rights' (2004) 15(1) *Australian Intellectual Property Journal* 34; Ikechi Mgbeoji, *Global Biopiracy: Patents, Plants and Indigenous Knowledge* (Cornell University Press 2006); Doreen Stabinsky and Stephen B Brush (eds), *Valuing Local Knowledge: Indigenous People and Intellectual Property Rights* (Island Press 2007).

because over 80 per cent of the farmers in Nigeria are small-scale farmers.¹⁴⁹ These small-scale farmers currently feed Nigeria, as they produce about 98 per cent of the food consumed.¹⁵⁰

This part ‘delves into the everyday life’ of small-scale farmers in Nigeria to understand how the implementation of TRIPS may affect their farming practices.¹⁵¹ In line with quintessential TWAIL scholarship, paying attention to marginalised peoples provides the interpretative prism to evaluate the implementation of international law.¹⁵² As Antony Anghie points out, all TWAIL scholarships have two questions in common: ‘(i) how can international law be used to further the interests of the peoples of the Third World? (ii) how does a particular rule or regime empower or disempower peoples in the Third World?’¹⁵³ Bearing in mind that the ‘peoples of the Third World’ here refers to the small-scale farmers, this part examines the informal seed system in Nigeria.¹⁵⁴ It explores farmers’ varieties and traditional farming systems alongside the interface between the informal seed system and plant variety protection.

¹⁴⁹ The Nigerian National Bureau of Statistics defines small-scale farmers as farmers with less than two hectares under cropping. National Bureau of Statistics (NBS) - Commercial Agriculture Development Project (CADP), *NBS/CADP Baseline Survey Report*, (The National Bureau of Statistics-Commercial Agriculture Development Project, 2010) 17
<<https://www.nigerianstat.gov.ng/pdfuploads/CADP%20Report%20Final.pdf>> 25 July 2017; Context Network and Sahel Capital, *Nigeria Early Generation Seed Study* (n 115) 8; R N Mgbenka and E N Mbah, ‘A Review of Smallholder Farming in Nigeria: Need for Transformation’ (May 2016) 3(2) *International Journal of Agricultural Extension and Rural Development Studies* 43, 43 (‘A Review of Smallholder Farming in Nigeria’).

¹⁵⁰ Mgbenka and Mbah, ‘A Review of Smallholder Farming in Nigeria’ (n 149) 43.

¹⁵¹ The ‘delve into everyday life’ quote is from Luis Eslava and Sundhya Pahuja, ‘Between Resistance and Reform: TWAIL and the Universality of International Law’ (2011) 3(1) *Trade, Law and Development* 103, 123; Luis Eslava and Sundhya Pahuja, ‘Beyond the (Post) Colonial: TWAIL and the Everyday Life of International Law’ (2012) 45(2) *Journal of Law and Politics in Africa, Asia and Latin America – Verfassung und Recht in Übersee (VRU)* 1, 1.

¹⁵² Antony Anghie and B S Chimni, ‘Third World Approaches to International Law and Individual Responsibility in International Conflict’ (2003) *Chinese Journal of International Law* 77, 78.

¹⁵³ Antony Anghie, ‘TWAIL: Past and Future’ (2008) 10 *International Community Law Review* 479, 480.

¹⁵⁴ See discussion on ‘Third World’ under ‘Methodology’ in Chapter 1.

2.3.1. Farmers' Varieties

Plant varieties developed by small-scale farmers are commonly referred to as farmers' varieties.¹⁵⁵ Farmers' varieties are a key source of seeds for small-scale farmers in Nigeria for three reasons.¹⁵⁶ First, farmers' varieties are adaptable to local conditions. This is useful for farmers, particularly because the formal seed sector does not cater to all crops. Second, farmers' varieties are easily accessible as informal seed channels exist even in remote farming communities. Third, farmers' varieties are often more affordable than formal sector varieties. This provides access to seeds especially for resource-poor small-scale farmers.

Farmers' varieties are disseminated in Nigeria's informal seed system through community seed networks or CSOs, seed dealers, and from farmer-to-farmer.¹⁵⁷ These three methods of dissemination are outlined in turn. First, community-based seed networks exist across Nigeria. For example, there are co-operatives in Kebbi state in Northern Nigeria where seeds from farmers are sold to both members and non-members at discounted prices.¹⁵⁸ A local rice variety known as *Oriza nogistaminata* can only be purchased from community seed stores in the state. This rice variety is popular amongst small-scale farmers because it is reputed to survive floods and to contain medicinal properties against diabetes.¹⁵⁹ Second, seed dealers distribute and sell seeds to farmers in local or community seed markets.¹⁶⁰ Most seed dealers have basic knowledge of the seed industry, as they usually have previous work experience in registered seed companies or agricultural institutions.¹⁶¹ Third, small-scale farmers share, exchange, or sell their varieties to relatives, neighbours, friends, and other farmers.

¹⁵⁵ Halewood and Lapena, 'Farmers' Varieties and Farmers' Rights' (n 144) 1.

¹⁵⁶ Conclusion from interviews with small-scale farmers in Nigeria.

¹⁵⁷ Ayodele Uwala, 'The Role of Informal Seed Sector in Agricultural Production in Nigeria' (Written correspondence, March 2017) ('The Role of Informal Seed Sector in Agricultural Production in Nigeria').

¹⁵⁸ *ibid.*

¹⁵⁹ *ibid.*

¹⁶⁰ *ibid.*

¹⁶¹ *ibid.*

Sharing, exchanging, or selling varieties is an integral part of farmers' seed dissemination in Nigeria, as in other parts of the Global South. Over the centuries, farmers have developed methods of identifying varieties with desirable traits.¹⁶² For example, farmers assess plant characteristics such as plant height, plant vigour, number of branches or tillers, growth patterns, and ability to withstand weed pressure.¹⁶³ Farmers then obtain the desired varieties either through exchange or purchase.¹⁶⁴ Moses Abila, one of the small-scale farmers interviewed in Iddah community, Kaduna, Northern Nigeria, explained that he either gives away or sells his well-performing varieties to other farmers: 'if he [another farmer] comes to help us harvest, then he gets grain for free. If not, he will buy it.'¹⁶⁵ Yet, as will be seen below, this small-scale farmers' practice of freely giving or exchanging farm-saved seed is problematic for IPRs, as farmers may be limited from saving, reusing, exchanging, or selling seed under certain plant variety protection systems such as the plant breeders' rights system under the UPOV 1991 Convention.

Small-scale farmers interviewed during fieldwork for this thesis provided varied responses to the question about their source of seed. For example, James Magaji, a small-scale farmer in Iddah community, Kaduna State, explains that he plants a rice variety known as 'Jankara' which he got from his father.¹⁶⁶ He explains that he plants the farmers' variety because he and his family prefer eating it: 'Jankara will swell up when you cook it.'¹⁶⁷ Magaji further explains that he understands the origin of the Jankara variety as he watched his father plant it, thus he prefers to plant a variety he is familiar with.¹⁶⁸ Conversely, Thomas Haruna, another small-scale farmer in Iddah community, explains that he purchases improved rice varieties from seed companies because of the economic benefits from higher crop

¹⁶² *ibid.*

¹⁶³ *ibid.*

¹⁶⁴ *ibid.*

¹⁶⁵ Fieldwork interview with Moses Abila, a small-scale farmer in Iddah Community (Kaduna, 2015) (transcript on file with author).

¹⁶⁶ Fieldwork interview with James Magaji, a small-scale farmer in Iddah Community (Kaduna, 2015) (transcript on file with author).

¹⁶⁷ *ibid.*

¹⁶⁸ *ibid.*

yields and consumer preference.¹⁶⁹ He explains that seed companies market their varieties as higher yielding than farmers' varieties: 'I believe what they say, I buy the seed to try and see.'¹⁷⁰ He further explains that the 'rice is shinier – more pure, and people buy it more.'¹⁷¹ Divergent perspectives on seed sources can be seen here. For the first farmer, his farming and food choice is a part of his cultural heritage, while the second farmer is driven by economic rewards.

Abraham Ogungbile, the Managing Director of Premier Seeds, Nigeria, corroborates the economic perspective on small-scale farmers' seed source and use. He explains that farmers understand 'the difference between the improved seed and their local seed, farmers who see farming as a business and are desirous of making money will purchase improved seed.'¹⁷² Ogungbile concludes that farmers have a choice when sourcing for seeds. Therefore, farmers desirous of specific qualities in seed, such as high yield, would purchase seeds from the formal seed sector.¹⁷³

2.3.2. Traditional Farming Systems

Traditional farming systems broadly encompass the techniques, methods, and knowledge used by small-scale farmers and farming communities.¹⁷⁴ These long-established systems include crop and soil health techniques as well as cultural farming methods.¹⁷⁵ Small-scale farmers in Nigeria either use traditional farming

¹⁶⁹ Fieldwork interview with Thomas Haruna, a small-scale farmer in Iddah Community (Kaduna, 2015) (transcript on file with author).

¹⁷⁰ *ibid.*

¹⁷¹ *ibid.*

¹⁷² Fieldwork interview with Abraham Ogungbile, Managing Director of Premier Seed Nigeria Ltd. (Abuja, 2015) (transcript on file with author).

¹⁷³ *ibid.*

¹⁷⁴ Traditional farming systems here refers to the totality of farming activities that exist or develop as part of the customs of farmers or farming communities, which are passed on from one generation to another.

¹⁷⁵ E M Igbokwe, 'A Soil and Water Conservation System under Threat. A Visit to Maku, Nigeria' in C Reij, I Scoones, and C Toulmin (eds), *Sustaining the Soil: Indigenous Soil and Water Conservation in Africa* (Earthscan Publication 1996) 219-43; B Junge, O Deji, R Abaidoo, D Chikoye, and K Stahr, 'Farmers' Adoption of Soil Conservation Technologies: A Case Study from Osun State, Nigeria' (2009) 15(3) *The Journal of Agricultural Education and Extension* 257, 258.

techniques or combine these with modern technologies.¹⁷⁶ In general, farmers regulate ecosystem dynamics using natural processes of cycling water, organic matter, and nutrients to maintain soil fertility without depending on chemical fertilisers.¹⁷⁷

Although farmers may not understand scientific lexicon or conduct laboratory experiments, they understand through experience how traditional systems sustainably improve farming. For crop and soil improvement techniques, Uwala notes that in Northern Nigeria, where mainly cereals such as millet and sorghum are grown, animal dung and poultry dropping are regularly applied to the soil as sources of nutrients for crops.¹⁷⁸ In addition, Peter Bakare points out that small-scale farmers practice crop rotation as a way of ‘giving the land fertiliser.’¹⁷⁹ Crop rotation involves growing different types of crops on the same land from season-to-season.¹⁸⁰ For example, deep-rooted crops are planted before shallow-rooted crops. Cassava or yam, which are deep-rooted crops, could be planted in one year, followed by legumes such as white beans and groundnuts which are shallow-rooted crops.¹⁸¹

Furthermore, Uwala and Bakare explain that small-scale farmers in Nigeria generally practice intercropping.¹⁸² Intercropping involves growing two or more crops simultaneously – on the same field – to promote interaction between them.¹⁸³

¹⁷⁶ N O Adedipe, P A Okunneye, and I A Ayinde, ‘The Relevance of Local and Indigenous Knowledge for Nigerian Agriculture’ (presented at the International Conference on Bridging Scales and Epistemologies: Linking Local Knowledge with Global Science in Multi-Scale Assessments, Alexandria, Egypt, 16-19 March 2004) 1 (‘The Relevance of Local and Indigenous Knowledge for Nigerian Agriculture’).

¹⁷⁷ *ibid* 3.

¹⁷⁸ Uwala, ‘The Role of Informal Seed Sector in Agricultural Production in Nigeria’ (n 157). See also Irene Hoffman, Dirk Gerling, Usman Kyiogwom, and Anke Mane-Bielfeldt, ‘Farmers’ Management Strategies to Maintain Soil Fertility in a Remote Area in Northwest Nigeria’ (2001) 86 *Agriculture, Ecosystems, and Environment* 263.

¹⁷⁹ Fieldwork interview with Prince Peter Bakare (Abuja, 2015) (transcript on file with author).

¹⁸⁰ *ibid*.

¹⁸¹ Nonetheless, Bakare notes that the increase in population densities and demand for land has reduced this practice. Fieldwork interview with Bakare (n 179).

¹⁸² Uwala, ‘The Role of Informal Seed Sector in Agricultural Production in Nigeria’ (n 157); Fieldwork interview with Bakare (n 179).

¹⁸³ *ibid*. On intercropping in Nigeria, see generally, I Ibeawuchi, ‘Intercropping – A Food Production Strategy for the Resources Poor Farmers’ (2007) 5(1) *Nature and Science* 46 (‘Intercropping – A Food Production Strategy for the Resources Poor Farmers’).

For example, yam, maize, and cassava are often intercropped. The yam/maize/cassava intercrop is productive particularly because the maize growth cycle, which is from three to four months, is shorter than the growing season for cassava and yams, which is from seven to 12 months.¹⁸⁴ Yam is usually the first crop planted because it has the longest growing season of the three crops, while cassava is generally inter-planted during the last phase of the yam-growing season.¹⁸⁵ Maize (and other short season crops such as melons, cowpeas, okra, and pumpkin) is subsequently inter-planted through the yam garden.¹⁸⁶

These traditional farming systems are certainly not exhaustive. The ecological and climatic diversity as well as cultural differences in the 36 states of Nigeria generate a wide range of traditional farming systems. However, one of the shortcomings of traditional farming systems in Nigeria is lack of formal documentation. While experienced small-scale farmers or farming communities may have unique farming methods or techniques, these are hardly passed down through generations or formally documented.¹⁸⁷ Similarly, farmers' varieties developed on-farm for centuries are largely undocumented. For example, while varieties like 'Jankara' may be popular amongst farmers in specific parts of Kaduna State, it is largely unknown in other parts of Nigeria.¹⁸⁸ This lack of proper documentation makes it difficult to recognise or reward small-scale farmers' contributions to the seed system under plant variety protection systems.

¹⁸⁴ *ibid* 48.

¹⁸⁵ *ibid*.

¹⁸⁶ *ibid*.

¹⁸⁷ For discussions on traditional farming practices generally, see Bertus Haverkort and David Millar, 'Constructing Diversity: The Active Role of Rural People in Maintaining and Enhancing Biodiversity' (1994) 2 *Etnoloecologica* 51; Roht-Arriaza, 'Of Seeds and Shamans' (n 148), 931-36.

¹⁸⁸ This is a farmers' variety of rice identified by one of the small-scale farmers interviewed in Iddah Community, Kaduna State, Nigeria.

2.3.3. Interface: Informal Seed System and Plant Variety Protection

Two issues that stem from the assessment of the informal seed system in Nigeria vis-à-vis plant variety protection are (i) saving, reusing, exchanging, and selling seeds, and (ii) protection of farmers' varieties.¹⁸⁹

First, both farmers that use farmers' varieties and improved varieties highlighted above explained that they save, reuse, exchange, and sell seeds. Recall that Magaji explained that he got his rice seeds from his father. These rice varieties would have been saved and passed down through generations. Similarly, Haruna, the small-scale farmer who purchases improved varieties mentioned above explains that 'I buy the seed, and after harvesting, I store it... I put it in a clay pot, seal with clay, till the next season.'¹⁹⁰ For this farmer, although he purchases improved seeds, he still stores it using the traditional methods. Uwala confirms that small-scale farmers in Nigeria generally save seeds.¹⁹¹ He explains that these small-scale farmers preserve seeds in rhombuses or sealed containers hung on top of trees or over fireplaces in the kitchen.¹⁹² Small-scale farmers also sell farm-saved seeds. As seen in 2.3.1 above, farmers often purchase varieties with desirable traits from other farmers or local or community seed markets.

In essence, a plant variety protection system that prohibits farmers from saving, reusing, exchanging, and selling farm-saved seeds would dismantle the informal seed system in Nigeria. From a regulatory perspective, Yarama concludes that '...it is going to be a suicidal effort to insist that farmers must go back to buy seed every year ... If you have a material that is superior, farmers will always be willing to pay for it. Because it is the superiority of your material that should allow farmers return to buy the seed every year.'¹⁹³

¹⁸⁹ Access and benefit sharing was discussed in 2.1 above, under the FME and CBD.

¹⁹⁰ Fieldwork interview with Haruna (n 169).

¹⁹¹ Uwala, 'The Role of Informal Seed Sector in Agricultural Production in Nigeria' (n 157).

¹⁹² *ibid*

¹⁹³ Fieldwork interview with Ndirpaya (n 3).

Second, contrary to academic literature and CSOs' interventions that call for the protection of farmers' varieties, the small-scale farmers interviewed in Nigeria were unaware of IPRs protection for farmers' varieties. However, after explaining plant variety protection, there were polarised views about it. One group of farmers indicated that they would be interested in protecting farmers' varieties if they would receive financial remuneration. The other small-scale farmers opposed the idea of protecting farmers' varieties. This group felt that farmers' varieties and seeds are part of their cultural heritage which should be freely shared with other farmers. This position reflects the communal nature of farming practices and aversion to appropriation of life forms by farming communities in Nigeria.¹⁹⁴

However, expressing support for protection of farmers' varieties, Ekpere echoes the sentiment of a number of other interviewees by arguing that:

Farmers in Nigeria should have those rights [IPRs for plant varieties], and they should be construed legally as rights. Proprietary rights, community rights, individual rights, just as that ascribed to breeders... That farmer who plants yams, maize, etc. knows exactly what particular seed to keep for next year, and next year he grows it and he is assured of either similar or better crop than last year. That process is very similar or substantially equivalent to the breeding process of the crop breeder. It is exactly the same. You may not be able to say that farmer or breeder has a PhD in veterinary medicine or in agronomy, but he knows it, it is intellectual, he applies it and it works, and the principle of substantial equivalence says exactly that. That they don't have to be exact but they have to be substantially equivalent, and if they are substantially equivalent, then they should be recognised, and they should be accepted for protection processes.¹⁹⁵

¹⁹⁴ Uwala, 'The Role of Informal Seed Sector in Agricultural Production in Nigeria' (n 157).

¹⁹⁵ Fieldwork interview with Johnson Ekpere, Former Secretary-General of the Scientific, Technical, and Research Commission of the Organisation of African Unity (OAU/STRC) and lead protagonist of the African Model Law (Ibadan, 2015) (transcript on file with author). Other interviewees in favour of IPRs for farmers' varieties include Adebambo Adewopo and Bankole Sodipo.

The argument in favour of the protection of farmers' varieties in Nigeria is generally that farmers conserve and develop farmers' varieties adaptable to local agro-climatic conditions. Therefore, farmers' efforts ought to be recognised and rewarded in a similar way as the actors in the formal seed sector.

It is important to point out that the use of varieties from the informal seed sector, combined with intercropping or mixed cropping farming systems, results in assorted varieties which do not meet the existing DUS standards for registering new varieties in Nigeria. Reflecting on the procedure for registering varieties in Nigeria, Aladele, the Registrar of NACGRAB, raised a number of concerns about the practicalities of registering farmers' varieties. For example, he questioned farmers' ability to provide substantial evidence in a scientific way in applications for registration of varieties. He further explained that to register new varieties, applicants are required to face a panel of scientists to defend the variety.¹⁹⁶ One reply to the issues raised is that the NCVLBA, NASA, or subsequent IPRs systems seeking to allow the protection of farmers' varieties could provide alternative procedures for registering farmers' varieties.

What follows is the final part of this background chapter on Nigeria, which shows how the current agricultural policy could effect changes to both the informal and formal seed systems.

2.4. Agriculture Promotion Policy: 2016-2020

2.1, 2.2 and 2.3 cover Nigeria's international obligations, national legislation relevant to plant varieties, the informal seed system, and small-scale farming practices. This part assesses pertinent provisions in Nigeria's current agricultural policy – the Agriculture Promotion Policy: 2016-2020 (APP). In particular, it draws attention to how the APP promotes private sector participation in Nigeria's

¹⁹⁶ Fieldwork interview with Aladele (n 28).

agriculture sector, which may trigger calls for specific plant variety protection systems suited to the private sector.

The APP focuses on improving two main aspects of the agricultural sector, namely food production and export revenue.¹⁹⁷ The government's strategy to address these core issues is a private sector-led agricultural sector.¹⁹⁸ To promote a private sector-led agricultural sector, the APP prioritises the development of legislative and institutional frameworks that facilitate agricultural investments in the country.¹⁹⁹ While the APP does not specifically mention plant variety protection, one of its policy commitments is to review domestic seed laws and policies.²⁰⁰ With regard to institutional framework, the FMARD is the key ministry mandated to implement provisions of the APP.²⁰¹ However, the FMARD recognises the relationship between agriculture and other sectors such as industry, environment, power, energy, works, and water. Therefore, the FMARD is committed to working with other ministries when required, to implement the provisions of the APP.²⁰²

Notably, the APP builds on the previous administration's agricultural policies and programmes, including the ATA introduced in 2011, Vision 20:2020 introduced in 2009, the 7-point agenda introduced in 2007, and the National Economic Empowerment and Development Strategy (NEEDS), introduced in 2004.²⁰³ A similar thread running through these agricultural policies and programmes is that they all seek to push for increased private sector participation in the agricultural sector. In particular, the APP builds on the ATA, which sought to refocus the

¹⁹⁷ FMARD, *The Agriculture Promotion Policy* (n 45).

¹⁹⁸ *ibid* 27.

¹⁹⁹ *ibid* 26.

²⁰⁰ *ibid* 39.

²⁰¹ *ibid* 13.

²⁰² *ibid* 13.

²⁰³ See for example, Nigerian National Planning Commission, 'Meeting Everyone's NEEDS, National Economic Empowerment and Development Strategy' (Abuja 2004) <[http://siteresources.worldbank.org/INTPRS1/Resources/Nigeria_PRSP\(Dec2005\).pdf](http://siteresources.worldbank.org/INTPRS1/Resources/Nigeria_PRSP(Dec2005).pdf)> accessed 17 July 2017; National Planning Commission 'Nigeria Vision 20:2020, Economic Transformation Blueprint' (2009) <<http://www.nationalplanning.gov.ng/images/docs/NationalPlans/nigeria-vision-20-20-20.pdf>> accessed 17 July 2017; Akinwumi Adesina, *Agricultural Transformation Agenda: Repositioning Agriculture to Drive Nigeria's Economy* (FMARD 2012) <<http://studylib.net/doc/12092363/agricultural-transformation-agenda--repositioning-agricul...>> accessed 17 July 2017 (*Agricultural Transformation Agenda*).

Nigerian government's attention from oil and gas to agriculture.²⁰⁴ It was the ATA that established the concept of 'treating agriculture as a business', which the APP builds on.²⁰⁵ By treating agriculture as a business, the ATA sought to reorient agriculture from a development project centred on government funding, to a profit-driven enterprise with the private sector as the main growth driver.²⁰⁶ Significantly, the APP states that the concept of treating agriculture as a business will remain a cardinal part of Nigeria's agriculture policies in the future.²⁰⁷ Despite its oil reserves, agriculture is the mainstay of Nigeria's economy.²⁰⁸ It employs over 30 percent of its labour force and contributes over 20 per cent to Nigeria's GDP.²⁰⁹ However, with the fall in oil prices, the current administration has turned to the agriculture sector.²¹⁰ This is reflected in the APP's objective to rebuild agriculture in Nigeria through private sector investments.²¹¹

Alongside promoting private sector participation in agriculture, the APP acknowledges the role and contribution of small-scale farmers to Nigeria's agricultural sector. Indeed, it introduces reforms and programmes to enhance small-scale productivity such as access to finance, access to inputs, and access to relevant agrarian information.²¹² However, the APP's promotion of private sector-

²⁰⁴ Adesina, *Agricultural Transformation Agenda* (n 203); Ngozi Okonjo-Iweala, *Reforming the Unreformable: Lessons from Nigeria* (The MIT Press 2012) 139-40.

²⁰⁵ Adesina, *Agricultural Transformation Agenda* (n 203) 3; FMARD, *The Agriculture Promotion Policy* (n 45) 12.

²⁰⁶ Adesina, *Agricultural Transformation Agenda* (n 203) 2.

²⁰⁷ FMARD, *The Agriculture Promotion Policy* (n 45) 12.

²⁰⁸ FAO, 'Nigeria at a Glance' <<http://www.fao.org/nigeria/fao-in-nigeria/nigeria-at-a-glance/en/>> accessed 28 August 2017; The International Fund for Agricultural Development, 'Rural Poverty in Nigeria' <<https://operations.ifad.org/web/rural-poverty-portal/country/home/tags/nigeria>> accessed 25 July 2017 ('Rural Poverty in Nigeria').

²⁰⁹ *ibid*; The World Bank, 'Employment in Agriculture (% of total employment)' (2010) <<https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=NG>> accessed 25 August 2017; The World Bank, 'Agriculture, Value Added: % of GDP' (2016) <<https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=NG>> accessed 28 August 2017.

²¹⁰ For information on different national and international partnerships to rebuild the agriculture sector in Nigeria, see generally, FMARD <<http://fmard.gov.ng/>> accessed 06 June 2017; FAO, 'Nigeria at a Glance' (n 208). See also the current administration's policy which commits to diversify the economy, in part by rebuilding the agriculture sector: Manifesto of All Progressives Congress <<http://www.allprogressivescongress.org/manifesto/>> accessed 25 July 2017; All Progressives Congress, 'Roadmap to a New Nigeria' <<http://www.thescoopng.com/wp-content/uploads/2014/03/210989962-Roadmap-to-a-New-Nigeria.pdf>> accessed 25 July 2017.

²¹¹ FMARD, *The Agriculture Promotion Policy* (n 45) 5-6.

²¹² *ibid* 36-40.

led agriculture encourages commercial large-scale farmers and agribusinesses. Therefore, what the APP seeks to create is an agricultural sector where small and large-scale farmers as well as agribusinesses not only co-exist, but also thrive together. Drawing from this, it is argued that the plant variety protection system suited to Nigeria would also be one that caters to the interests of both small-scale farmers and private seed companies.

2.5. Conclusion

This chapter attempts to contribute to answering the first central research question posed in this thesis which concerns the plant variety protection system best suited to Nigeria. Despite the obligation to protect plant varieties under TRIPS, Nigeria currently does not have a plant variety protection system. It also does not have operational access and benefit sharing or farmers' rights principles as obliged under the CBD. A TWAIL and regime complex assessment of this background on Nigeria shows that there is lack of synergy amongst the government institutions implicated in plant variety protection and generally inactive actors to push for industrial property or *sui generis* reforms. Nonetheless, Nigeria has laws for the registration, release, and commercialisation of new varieties. It also has a practice of granting moratoriums of 10 years to allow private companies to exclusively market new varieties. However, this practice is unenforceable because it is not backed by the force of law. Following from TWAIL, attention is drawn to the informal seed sector and small-scale farming practices. Incorporating discussions on the informal sector no doubt presents a more comprehensive background on the state of plant variety protection in Nigeria.

While the pending obligation under TRIPS is one reason for Nigeria to design a plant variety protection system suited to it, other more compelling reasons are its current agriculture policy which promotes private sector-led agriculture and its current IPRs reform developments. Nigeria's current administration's focus on agriculture as a driver for the economy has created both national and international interest in the sector, which may trigger calls for specific plant variety protection

systems that favour private seed companies. Furthermore, the current IPC Bill includes plant variety protection provisions skewed in favour of private seed companies. However, the chapter concludes that any plant variety protection system introduced in Nigeria ought to simultaneously protect the interests of small-scale farmers and private seed companies (commercial plant breeders), as they both significantly contribute to the seed sector. The details set out in this chapter provides key insights into the Nigerian realities vis-à-vis plant variety protection. Significantly, it provides empirical background on which the original TWAIL and regime complex analysis of plant variety protection in the Global South is built.

The next chapter will examine the different plant variety protection options under TRIPS. This examination not only covers the possible TRIPS-compliant plant variety protection options Nigeria may consider, it also uncovers the benefits and drawback of each system for Nigeria (and other similar Global South WTO members). The next chapter is important to the thesis because it employs the findings from this chapter – about the realities in Nigeria – to analyse the different possible ways of implementing the obligation to protect plant varieties under TRIPS. Thus, the next chapter also contributes to answering the first central research question about the type of plant variety protection system best suited to Nigeria.

Chapter 3

Plant Variety Protection Options under TRIPS

Nigeria can implement its obligation to protect plant varieties under TRIPS through a patent system, a *sui generis* system, or a combination of systems.¹ Understanding the plant variety protection option suited to Nigeria requires a solid grasp of each system, which is useful to answer the first central research question posed in this thesis. The background provided in Chapter 2 concludes that Nigeria ought to design a plant variety protection system that simultaneously protects the interests of small-scale farmers and private seed companies.² This chapter examines the plant variety protection options allowed under TRIPS to tease out the option that caters to both small-scale farmers and private seed companies operating in Nigeria. In line with the TWAIL characteristic preoccupation with unpacking international law from a Global South perspective, the coverage of law, conditions for protection, and scope of protection in each system is examined.³ This examination extracts the benefits and drawbacks of each system for Nigeria.

The chapter finds that determining the plant variety protection option under TRIPS that is best suited for Nigeria is challenging because of the interrelated legal systems and principles relevant to plant variety protection. While TRIPS sets out the minimum standard for all WTO members to protect plant varieties, further legal systems and principles relevant to plant variety protection are set out in the UPOV Convention, the CBD, the ITPGRFA, and the Genetic Resources treaty currently under negotiation in WIPO.⁴ The existence of these overlapping treaties covering

¹ Article 27.3(b) of TRIPS.

² See Chapter 2.

³ Makau Mutua notes that one of the key objectives of TWAIL is to ‘understand, deconstruct and unpack the uses of international law as a medium to subordinate non-Europeans to Europeans’. Makau Mutua, ‘What is TWAIL?’ (2000) The American Society of International Law Proceedings of the 94th Annual Meeting, Washington DC 31, 31.

⁴ International Convention for the Protection of New Varieties of Plants (1991) 815 UNTS 89 <<http://www.upov.int/en/publications/conventions/1991/act1991.htm>> accessed 04 July 2017; CBD (1992) 1760 UNTS 79, 31 ILM 818; International Treaty on Plant Genetic Resources for Food

plant varieties in non-hierarchical regimes reflects the regime complex for plant variety protection.⁵ Importantly, the chapter finds that a *sui generis* plant variety protection system is best suited to Nigeria. *Sui generis* simply means a special or unique system. The *sui generis* option provides the latitude for Nigeria to protect the interests of both small-scale farmers and private seed companies (commercial plant breeders') in line with its national realities. As such, a creatively designed *sui generis* system would pull together the relevant legal principles from the UPOV Convention, the CBD, and the ITPGRFA.

The chapter is divided into four parts. Part I examines the patent option for plant varieties set out in TRIPS. Part II elaborates on the 'plant breeders' rights' system, a type of *sui generis* system set out in the UPOV Convention. The UPOV Convention is the only international treaty that focuses exclusively on plant variety protection. Part III explores the creative *sui generis* option. It explains how a creative *sui generis* system may be developed by pulling together a variety of legal systems and principles. Part IV briefly addresses the protection of plant varieties using a combination of systems. Ultimately, the analysis in Parts I to IV contributes to determining the plant variety protection system best suited to Nigeria.

3.1. Patent System

The inclusion of patents as a plant variety protection option under TRIPS was thanks to the United States (US).⁶ The US favoured the patent option because it offered broader protection and fewer exceptions than *sui generis* systems. Furthermore, the US had already extended patents to plant varieties through case law at the time of the TRIPS negotiations.⁷ Indeed, for the US, 'anything under the

and Agriculture (3 November 2001) Res 3/2003 FAO Conference, 31st session <<ftp://ftp.fao.org/docrep/fao/011/i0510e/i0510e.pdf>> accessed 04 July 2017 (ITPGRFA); World Intellectual Property Organisation (WIPO), Intergovernmental Committee <<http://www.wipo.int/tk/en/igc/>> accessed 26 July 2017.

⁵ See generally, Kal Raustiala and David Victor, 'The Regime Complex for Plant Genetic Resources' (2004) 58(2) International Organization 277 ('The Regime Complex for Plant Genetic Resources').

⁶ Jayashree Watal, *Intellectual Property Rights in the WTO and Developing Countries* (Oxford University Press 2001) 131 (*Intellectual Property Rights in the WTO and Developing Countries*).

⁷ See Chapter 1.

sun made by man’ was patentable.⁸ In particular, it was the private sector, led by companies such as Monsanto, Du-Pont, IBM, and Pfizer which sought to expand globally that pressured the US to push for generally stronger IPRs systems in TRIPS.⁹ Kal Raustiala and David Victor point out that ‘since 1980 [following the *Diamond v Chakrabarty* decision], the conventional wisdom in the US has been that strong property rights – patents, in particular – are essential to the modern biotechnology-based innovation system.’¹⁰ Thus, the US, along with Japan, Switzerland, and the Nordic countries proposed broad patents for all plant and living organisms during the TRIPS negotiations.¹¹ In contrast, the European Union (EU) and Global South countries rejected the proposal on patents for plant varieties.¹² Despite the lack of consensus, the patent option was included in TRIPS.

3.1.1. The Patent Option: TRIPS

Coverage of the Law

Article 27 of TRIPS provides that inventions in all fields of technology are patentable.¹³ Article 27.3(b) of TRIPS further specifically provides that plant varieties are also patentable.¹⁴ However, TRIPS neither defines plant varieties nor

⁸ See generally, *Sidney A Diamond, Commissioner of Patents and Trademarks v Ananda M Chakrabarty et al* (1980) 447 US 303 (*Diamond v Chakrabarty*); Anne E Crocker, ‘Will Plants Finally Grow into Full Patent Protection on an International Level? A Look at the History of US and International Patent Law Regarding Patent Protection for Plants and the Likely Changes after the US Supreme Court’s Decision in *JEM AG Supply v Pioneer Hi-Bred*’ (2003) 8 *Drake Journal of Agricultural Law* 251-94.

⁹ Peter Drahos and John Braithwaite, *Information Feudalism: Who Owns the Knowledge Economy?* (Earthscan 2002) 114-19.

¹⁰ Raustiala and Victor, ‘The Regime Complex for Plant Genetic Resources’ (n 5) 287.

¹¹ Terence Stewart (ed), *The GATT Uruguay Round: A Negotiating History 1986-1992* (Kluwer Law and Taxation Publishers 1993) 2294; International Centre for Trade and Sustainable Development, *UNCTAD-ICTSD Project on IPRs and Sustainable Development: Resource Book on TRIPS and Development* (Cambridge University Press 2005) 391.

¹² *ibid.*

¹³ TRIPS, art 27.

¹⁴ Article 27.3(b) of TRIPS provides: ‘[WTO] members may also exclude from patentability: plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement.’

sets out the required coverage of protection for plant varieties; that is, the range of plant species or botanical genera patentable under TRIPS. As such, it would appear that WTO members that choose the patent option are required to protect plant varieties of all species and genera.

Conditions for Protection

Plant varieties that are new, involve an inventive step, and are capable of industrial application are patentable.¹⁵ Neither TRIPS nor the Paris Convention – which TRIPS refers to with regard to patents – defines the new, inventive step, or industrial application conditions for patentability.¹⁶ Instead, Section 5 of TRIPS focuses on procedural requirements which distinguish patentable from non-patentable subject matter.¹⁷ Although there are differences in patent legislations at the national level, an invention is generally novel if it constitutes new knowledge when compared to the state of the art at the time of the application.¹⁸ It involves an inventive step if it is not obvious to a person skilled in the art, and it has industrial application if it can be translated into a product or process useful in industry – thus restricting patents for ideas, scientific concepts, or discoveries.¹⁹ Furthermore, Article 29 of TRIPS provides that patent applications are required to disclose the invention in a manner that is sufficiently clear and complete to ensure that the invention can be carried out by a person skilled in the art.²⁰ This disclosure

¹⁵ Article 27 of TRIPS provides: ‘subject to the provisions of paragraphs 2 and 3, patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application.’ The footnote in Article 27 states that for purposes of the article, the terms ‘inventive step’ and ‘capable of industrial application’ may be deemed by a member to be synonymous with the terms ‘non-obvious’ and ‘useful’, respectively.

¹⁶ Article 2 of TRIPS provides that in respect of Parts II, III, and IV of TRIPS (standards for patent protection is under Part II), WTO members shall comply with Articles 1-12 and 19 of the Paris Convention for the Protection of Industrial Property 1967 (Paris Convention).

¹⁷ TRIPS, s 5, arts 27-38.

¹⁸ See Chapter 2 for patentability of plant varieties under the Patents and Designs Act of Nigeria 1970 (PDA). See also Dwijen Rangnekar, *Access to Genetic Resources, Gene-Based Inventions and Agriculture* (Study Paper 3a, United Kingdom Commission on Intellectual Property Rights 2002), 25-26 (*Access to Genetic Resources, Gene-Based Inventions and Agriculture*).

¹⁹ *ibid.*

²⁰ TRIPS, art 29.

condition may also require the applicant to indicate the best mode for carrying out the invention.²¹

Scope of Protection

The patent owner has exclusive rights over the patents for 20 years.²² The exclusive rights conferred gives the owner the right to prevent third parties from making, using, offering for sale, selling, or importing patented products or processes without consent.²³ The patent owner also has the right to assign, transfer, or license the patent.²⁴ However, WTO members may exclude patents for inventions necessary to protect *ordre public* or morality, such as to protect human, animal, or plant life, or to avoid serious prejudice to the environment within their territory.²⁵ In *Plant Cells/Plant Genetic Systems*,²⁶ the Technical Board of Appeal of the European Patent Office clarified that the concept of morality is related to the belief that some behaviour is right and acceptable, while others are wrong.²⁷ This belief is founded on the totality of accepted norms deeply rooted in a particular culture.²⁸ The twin concepts of *ordre public* and morality are interpreted differently at the national level as TRIPS does not require uniform substantive definitions of these concepts. Indeed, the African Group at the TRIPS Council submits that patents for plant varieties are immoral and contrary to the fabric of African culture.²⁹

²¹ TRIPS, art 29.

²² The 20-year period is counted from the filing date of the invention. TRIPS, art 33.

²³ TRIPS, art 28(1).

²⁴ TRIPS, art 28(2).

²⁵ TRIPS, art 27.

²⁶ (1995) T 0356/93 (EPO).

²⁷ The case involved a patent application for a genetically modified herbicide-resistant plant. In the case, the Technical Board of Appeal held that the invention did not fall under the prohibition on patents for plant varieties provided in Article 53(b) of the European Patent Convention (EPC). As such, it was patentable, subject to some modifications. *Plant Cells/Plant Genetic Systems* (1995) T 0356/93 (EPO).

²⁸ *Plant Cells/Plant Genetic Systems* (n 27).

²⁹ African WTO member states formed a coalition in the WTO named the African Group. The African Group speaks with one voice, using a single coordinator or negotiating team. Joint Communication from the African Group. WTO, 'Taking Forward the Review of Article 27.3(b) of the TRIPS Agreement' (WTO Council for Trade-Related Aspects of Intellectual Property Rights) IP/C/W/404.

Furthermore, WTO members may provide limited exceptions to exclusive patent rights, provided the exceptions do not unreasonably conflict with the normal exploitation of the patent and the legitimate interest of third parties are taken into account.³⁰ A WTO dispute settlement panel in *Canada—Patent Protection of Pharmaceutical Products* explained that the conditions under this limited exception are cumulative.³¹ That is, each condition – (i) limited exception, (ii) unreasonable conflict with normal exploitation of patent, and (iii) legitimate interests of third parties – is a separate and independent requirement that must be satisfied.³² Failure to comply with any of the conditions results in the rejection of the Article 30 exception.³³ Significantly, the panel concluded that any exception that substantially curtails the patent owner’s exclusive rights cannot be considered a ‘limited exception’ under Article 30 of TRIPS.³⁴ This WTO panel interpretation of Article 30 shows that the limited exception provision prioritises the interests of the patent owner.

As TRIPS only provides minimum global standards, there are variations in implementing the patent standards in WTO member states. These variations and differences have also evolved over time, as seen from the examples of the US and the EU in Chapter 1.³⁵ Recall that the US extended patents to plant varieties through case law – *Diamond v Chakrabarty*,³⁶ *Ex Parte Hibberd*,³⁷ and *JEM AG Supply v Pioneer Hi-Bred*,³⁸ whereas patents for plant varieties are expressly prohibited under Article 53(b) of the European Patent Convention (EPC).³⁹

³⁰ International Centre for Trade and Sustainable Development, *UNCTAD-ICTSD Project on IPRs and Sustainable Development* (n 11) 433-37.

³¹ The complaint was by the European Community (EC) and its member states. *Canada—Patent Protection of Pharmaceutical Products* (2000) WT/DS114/R, [7.20], 152 <https://www.wto.org/english/tratop_e/dispu_e/7428d.pdf> accessed 24 June 2017 (*Canada—Patent Protection of Pharmaceutical Products*).

³² *Canada—Patent Protection of Pharmaceutical Products* (n 33) [7.20], 152.

³³ *ibid.*

³⁴ *ibid* [7.36], 156.

³⁵ See Chapter 1 for the history of plant variety protection.

³⁶ *Diamond v Chakrabarty* (n 8).

³⁷ *Ex Parte Hibberd et al* (1985) 227 USPQ 443.

³⁸ *JEM AG Supply Inc, DBA Farm Advantage Inc et al v Pioneer Hi-bred International Inc* (2001) 534 US 124.

³⁹ See Chapter 1 for the history of plant variety protection. Other countries that allow patents for plant varieties include Australia and Japan. These case law and legislative provisions remain the position of law in the US and Europe to date.

However, developments in Europe – such as Directive 98/44/EC on legal protection of biotechnological inventions (Biotechnology Directive) and the *Novartis v Transgenic Plant* case – show that the exclusion of patenting plant varieties is interpreted narrowly under the EPC.⁴⁰

The Biotechnology Directive maintains in principle the EPC prohibition on the patenting of plant varieties.⁴¹ However, it deviates from the EPC as it adds that ‘inventions which concern plants or animals shall be patentable if the technical feasibility of the invention is not confined to a particular plant or animal variety.’⁴² That is, patents are prohibited for a single plant or animal variety, but may be granted if the claim covers two or more varieties.⁴³ The decision in the *Novartis v Transgenic Plant* case strengthens the Biotechnology Directive, as the Enlarged Board of Appeal held that ‘a claim wherein specific plant varieties are not individually claimed is not excluded from patentability under Article 53(b) EPC, even though it may embrace plant varieties.’⁴⁴ In other words, where the patent claim is for a plant innovation that broadly covers two or more plant varieties, the innovation is patentable, provided it is not restricted to one (single) plant variety. Meanwhile, the express prohibition on the patentability of plant varieties is prevalent in the Global South. For example, the African Model Law, along with legislations in countries such as India, Thailand, and Nigeria prohibit patents for plant varieties.⁴⁵

⁴⁰ Directive 98/44/EC of the European Parliament and of the Council of 6 July 1998 on the Legal Protection of Biotechnological Invention; *Novartis v Transgenic Plant* (2000) G01/98 (EPOR) 303. See also decisions of the Enlarged Board of Appeal in G2/12 and G/13.

⁴¹ Article 4.1 of the Biotechnology Directive states: ‘The following shall not be patentable: plant and animal varieties.’

⁴² Biotechnology Directive, art 4.2. In addition, Recital 31 of the Biotechnology Directive provides that ‘a plant grouping which is characterised by a particular gene (and not its whole genome) is not covered by the protection of new varieties and is therefore not excluded from patentability, even it comprises new varieties of plants.’

⁴³ For discussions on the Biotechnology Directive and plant varieties, see generally, Dan Leskien, ‘The European Patent Directive on Biotechnology’ (1998) 36 *Biotechnology and Development Monitor* 16; Dan Leskien, ‘Administrative Council of the European Patent Office Amends Implementing Regulations to the European Patent Convention: Biotechnological Inventions’ (August 1999) *BIO-IPR* <<https://www.grain.org/article/entries/1919-epo-moves-to-use-eu-directive-on-life-patenting?c=true>> accessed 26 June 2017.

⁴⁴ *Novartis v Transgenic Plant* (n 40) 303.

⁴⁵ See, for example, the African Model Legislation for the Protection of Rights of Local Communities, Farmers, and Breeders, and for the Regulation of Access to Biological Resources 2000 (African Model Law), art 9; PDA, s 1.4(a).

Overall, it is important to note that patentable subject matter under TRIPS as set out in Article 27 broadly covers products and processes in all fields of technology.⁴⁶ It does not pay attention to specific issues surrounding the protection of plant varieties – such as the significance of plant varieties to food production, the informal seed sector, or traditional farming systems. Indeed, the main actors that patent plant materials are the multinational seed companies such as Monsanto, Syngenta, DuPont, Dow, Bayer, and BASF. In fact, these six companies account for 60 per cent of world seed sales.⁴⁷ There is also a growing trend of mergers and acquisitions among the big seed and chemical companies.⁴⁸ This trend has resulted in highly concentrated markets and dependence on these companies for essential plant material, which influence price-fixing. Two of the biggest seed and chemical companies, Bayer and Monsanto, are currently discussing a merger.⁴⁹ The combination of Bayer and Monsanto would substantially reduce competition in the

⁴⁶ TRIPS, art 27.

⁴⁷ The top three firms – Monsanto, DuPont, and Syngenta – control over 53 per cent of the world seed market. Philip H Howard, 'Intellectual Property and Consolidation in the Seed Industry' (2015) 55 *Crop Science* 1.

⁴⁸ The trend in mergers and acquisitions in the agricultural and seed sectors follow two previous phases of consolidation: first in the mid-1980s, and the second from the late 1990s to later 2000s. For example, in the second phase – AstraZeneca and Novartis Seeds merged to form Syngenta in 2000, BASF took over Cyanamid in 2000, while Bayer acquired Aventis Crop Sciences in 2002. Over the years, Monsanto has acquired almost 40 agricultural biotechnology firms and seed companies, including Agreco, Asgrow, Cargill's International Seed Division, Calgene, DeKalb Genetics Corporation, Delta & Pine Land, and Holdens. See generally, United Nations Conference on Trade and Development, *Tracking the Trend towards Market Concentration: The Case of the Agricultural Input Industry* (Study prepared by the UNCTAD Secretariat, 20 April 2006) UNCTAD/DITC/COM/2005/16 (*Tracking the Trend towards Market Concentration*); Diana L Moss, 'Transgenic Seed Platforms: Competition between a Rock and a Hard Place?' (23 October 2009) The American Antitrust Institute

<http://www.antitrustinstitute.org/sites/default/files/AAI_Platforms%20and%20Transgenic%20Seed_102320091053.pdf> accessed 26 June 2017; Philip Howard, 'Visualizing Consolidation in the Global Seed Industry 1996-2008' (2009) 1 *Sustainability* 1266; Diana L Moss, 'Transgenic Seed Platforms: Competition between a Rock and a Hard Place?' Addendum (The American Antitrust Institute, 5 April 2010); Senate Judiciary Committee Hearing: [8], Lanham: Congressional Documents and Publications (20 September 2016)

<http://www.antitrustinstitute.org/sites/default/files/Addendum%20to%20AAI%20White%20Paper_Transgenic%20Seed.4.5_040520101107.pdf> accessed 26 June 2017.

⁴⁹ Monsanto accepted Bayer's USD 66 billion offer of acquisition on 14 September 2016. Eric Sfiligoj, 'Bayer-Monsanto Happens' (2016) 179(10) *Croplife* 4. Similarly, Dow and DuPont are also in the process of a merger, which Dupont states is expected to close by August 2017. The Dow-DuPont merger has received clearance from the US Department of Justice and from Brazil, China, and Europe. Dupont, 'Dow and DuPont Receive Antitrust Clearance from US Department of Justice for Proposed Merger of Equals' (Dupont, 15 June 2017) <<http://investors.dupont.com/investor-relations/investor-news/investor-news-details/2017/Dow-and-DuPont-Receive-Antitrust-Clearance-from-US-Department-of-Justice-for-Proposed-Merger-of-Equals/default.aspx>> accessed 26 June 2017.

already intertwined seed and chemical markets.⁵⁰ Unsurprisingly, the broad patent provisions under TRIPS which sets out the same standards for protecting all fields of technology has given rise to debates about its extension to plant varieties.

3.1.2. Debates on Patents for Plant Varieties: Lessons for Nigeria

To start with, proponents of patents for plant varieties within the Crucible Group argue that intellectual property, including patent protection is a social necessity.⁵¹ That is, plant inventors have the right to prevent the unauthorised use of their plant varieties in the same way that industrial inventors have the right to protect their possessions and property.⁵² These proponents explain that patents are important to protect investments in developing new plant varieties, which is susceptible to unauthorised use as ‘others can multiply or photocopy the work of several years in a single field over just one growing season.’⁵³ Put differently, these proponents argue that researchers and investors who commit resources to develop plant inventions ought to recover their investment. For instance, Monsanto, a multinational agricultural company and leading producer of genetically engineered seed, states that it ‘seeks IPRs including patents and often plant breeder’s rights, to

⁵⁰ Centre for Food Safety, ‘Tell President Trump: No Dangerous Monsanto-Bayer Mega Merger’ <http://salsa3.salsalabs.com/o/1881/p/dia/action3/common/public/?action_KEY=19826> accessed 26 June 2017. The Crucible II Group notes that government anti-trust laws could be used to curb excessive consolidation in the seed industry. The Crucible II Group, *Seeding Solutions: Volume 1, Policy Options for Genetic Resources: People Plants and Patents Revisited* (International Development Research Centre 2000) 17 (*Seeding Solutions: Volume 1*).

⁵¹ The Crucible Group encompasses members with a wide cross-section of socio-political perspectives and agricultural experiences that assembled to ‘hammer out ideas and recommendations’ on intellectual property (IP) for plants. The Crucible Group members: Bo Bengtsson, Tewolde Berhan Egziabher, Erskine Childers, Carlos Correa, Don Duvick, Paul Egger, Chusa Gines, Sven Hamrell, Jaap Hardon, Geoff Hawtin, Bente Herstad, Henk Hobbelink, Amir Jamal, Klaus Lampe, Francisco Martinez-Gomez, Camila Montecinos, Pat Roy Mooney, Katy Moran, Andrew Mushita, Bob Phelps, Michael Pimbert, Sarojeni Rengam, Tim Roberts, George Rothschild, Rene Salazar, Carl-Gustaf Thornstrom, Hans Wessels and Vo-Tong Xuan. The first meeting held from 16 to 21 June 1993 in Uppsala, Sweden. The three Crucible Group publications in 1994, 2000, and 2001 are referenced in this thesis. The Crucible Group, *People, Plants and Patents: The Impact of Intellectual Property on Trade, Plant Biodiversity and Rural Society* (International Development Research Centre 1994) 57- 63 (*People, Plants and Patents*).

⁵² *ibid* 57.

⁵³ *ibid*.

cover many of the traits and seed varieties it develops ... to ensure it is paid for its products and the investments put into developing them.’⁵⁴

Yet there is growing resistance to patenting plant materials and plant varieties both from civil society organisations (CSOs) and activists within the Global North and Global South. Within the Global North, non-state actors actively oppose patents for plant varieties and food crops. For example, Plantum NL, Europe’s largest breeder organisation, argues that patents pose a threat to the development of open innovation within the plant breeding sector.⁵⁵ Generally, CSOs such as the Centre for Food Safety, La Via Campesina, the Genetic Resources Action International Network (GRAIN), No Patents on Seeds, Navdanya, and the African Centre for Biodiversity all oppose patents for plant varieties and plant materials.⁵⁶ Two arguments against patenting plant varieties and plant materials are as follows.

First, the prohibition on farmers’ practice of saving and reusing seeds. The seed companies that patent plant varieties usually have contracts with farmers that prohibit the farmers from saving seeds. Seed saving is a historical practice for small-scale farmers, as seen from the Nigerian example in Chapter 2.⁵⁷ Nevertheless, seed companies meticulously investigate farmers’ fields for breaches of contracts. For example, Monsanto lists on its website that it has filed suits against farmers 147 times from 1997 to date.⁵⁸ It is important to note that this list only comprises actions against farmers that reached the courts; majority of the cases are settled outside of court. Although highly publicised cases involving Monsanto, such as *Monsanto Co v McFarling* (US), *Bowman v Monsanto Co* (US),

⁵⁴ Monsanto, ‘Patents’ <<https://monsanto.com/products/product-stewardship/patents/>> accessed 25 June 2017.

⁵⁵ Plantum NL, ‘Plantum NL Position on Patent –and Plant Breeders’ Rights’ <<http://cucurbitbreeding.com/wp-content/uploads/2016/04/plantum-nl-position-on-patent-and-plant-breeders-rights.pdf>> accessed 26 June 2017.

⁵⁶ For example, see Genetic Resources Action International Network (GRAIN), ‘Of Patents and Pirates’ (GRAIN Report 2000); La Via Campesina/GRAIN, ‘Seed Laws that Criminalise Farmers: Resistance and Fightback’ (8 April 2015) <<https://www.grain.org/article/entries/5142-seed-laws-that-criminalise-farmers-resistance-and-fightback>> accessed 04 July 2017.

⁵⁷ See Chapter 2 for discussion on the informal seed system.

⁵⁸ Monsanto, ‘Saved Seed and Farmer Lawsuits’ (11 April 2017) <<https://monsanto.com/company/media/statements/lawsuits-against-farmers/>> accessed 25 June 2017.

and *Monsanto Canada Inc v Schmeiser* (Canada), ended up with judgments delivered in favour of Monsanto, the important takeaways from these and other seed company cases is that the patent system prohibits the age-long traditions of farmers' saving and reusing seeds.⁵⁹

In essence, patenting plant varieties would require farmers in Nigeria to purchase seeds every planting season, which would be carefully policed by the profit-oriented seed companies.⁶⁰ While a counter-argument is that small-scale farmers should simply focus on growing their traditional varieties, it will be recalled from Chapter 2 that only certified seeds – which exclude farmers' varieties – are officially registered, released, and commercialised in Nigeria. Thus, introducing a patent system in Nigeria could further limit farmers' sources of livelihood which revolves around saving, reusing, and selling farm-saved seeds along with its products.

Second, the broad scope of patents granted and the exclusion of the breeders' exemption. Plant varieties are 'characterised by essentially all of its genes.'⁶¹ Therefore, patenting plant varieties may restrict the use of both the body of genes which make up the variety and the isolated traits or genes embodied in it, which hinders research and breeding of new plant varieties.⁶² In other words, patents may encompass claims not only to the new plant variety, but also individual components of such variety, including genes, seeds, tissue cultures, cells, DNA sequences, and

⁵⁹ *Monsanto Company v Homan McFarling* (2007) Fed Cir 05-1570-1598; *Vernon Hugh Bowman v Monsanto Company et al* (2013) US 133 S Ct 1761; *Percy Schmeiser and Schmeiser Enterprises Limited v Monsanto Canada Incorporated and Monsanto Company* (2004) 1 SCR 902, 2004 SCC 34.

⁶⁰ See generally, the Centre for Food Safety reports: Centre for Food Safety, *Monsanto vs US Farmers* (2005) <<http://www.centerforfoodsafety.org/files/cfsmonsantovsfarmerreport11305.pdf>> accessed 25 June 2017; Centre for Food Safety and Save Our Seeds, *Seed Giants vs US Farmers* (2013) <http://www.centerforfoodsafety.org/files/seed-giants_final_04424.pdf> accessed 25 June 2017.

⁶¹ Tim Robert, 'Patenting Plants Around the World' (1996) *European Intellectual Property Review* 531, 533 ('Patenting Plants Around the World').

⁶² Carlos Correa, *Access to Plant Genetic Resources and Intellectual Property Rights* (Background Study Paper No 8, Commission on Genetic Resources for Food and Agriculture, April 1999) 1, 13 (*Access to Plant Genetic Resources and Intellectual Property Rights*).

specific plant parts.⁶³ Jack Kloppenburg notes that in the US case *Ex Parte Hibberd*, Hibberd's patent application included over 260 separate claims.⁶⁴ The ability to make multiple claims broadens the protection granted for the invention and also permits the individual licensing of particular components of the plant variety.⁶⁵ Thus, a patent on a plant variety can protect: (i) the inventive technique for producing the plant variety, (ii) the DNA sequence embedded in the plant variety, (iii) the whole plant variety which expresses certain genetic characteristics, and (iv) the progeny of these plant varieties.⁶⁶

Furthermore, the patenting of plant varieties is not limited to one specific variety. The patent holder has the right to prevent use of all plant varieties that carry the particular patented genetic materials or are the result of the patented technique.⁶⁷ Robin Pistorius and Jeroen van Wijk note that several US patents on plants provide protection for all transgenic plants of an entire species or even protect plants of different species produced through the patented technology.⁶⁸ For example, the US Patent and Trademark Office (USPTO) has issued patents which cover all sunflower products with low levels of saturated fatty acids, and for transgenic crops that are developed to express the *Bacillus thuringiensis* (Bt) toxin (a natural insect resistance).⁶⁹ The patenting of plant varieties may also prevent third parties from using the patented varieties for research and breeding.⁷⁰ The patent owner may prevent multiplication of the variety, tests crosses, subsequent research and development with the crosses, or use of the patented material as the parent of another variety both for breeding and even experimental purposes.⁷¹ No new plant

⁶³ Jack Kloppenburg, *First the Seed: The Political Economy of Plant Biotechnology 1492-2000* (2nd edn, University of Wisconsin Press 2004) 263 (*First the Seed*).

⁶⁴ *ibid.*

⁶⁵ *ibid* 264.

⁶⁶ Robin Pistorius and Jeroen van Wijk, *The Exploitation of Plant Information: Political Strategies in Crop Development* (CABI Publishing 1999) 140 (*The Exploitation of Plant Information*).

⁶⁷ *ibid* 140-41.

⁶⁸ *ibid* 141.

⁶⁹ *ibid.* These patents are both held by Pioneer Hi-Bred International Inc.: (i) Publication number EP0496504 A1: Sunflower Products Having Lower Levels of Saturated Fatty Acids (published 29 July 1992); (ii) Publication number: W02005094340 A2: Patents for Method of Reducing Insect Resistant Pests in Transgenic Crops (published 13 October 2005).

⁷⁰ Correa, *Access to Plant Genetic Resources and Intellectual Property Rights* (n 62) 13.

⁷¹ Robert, 'Patenting Plants Around the World' (n 61) 533; Correa, *Access to Plant Genetic Resources and Intellectual Property Rights* (n 62) 13.

variety is ‘created from scratch’, thus a patent system may limit access to genetic materials in Nigeria which is necessary for plant breeding.⁷²

Apart from the reasons above, practical questions about institutional capacity arise. Nigeria is not a patent examining country; in other words, Nigeria’s patent office does not examine patent applications. Therefore, the officers in Nigeria’s Trademarks, Patents, and Designs Registry would not be in a position to determine whether patent applications are over-reaching. In addition, Nigeria does not have a specialist IPRs judicial system to resolve disputes. Nonetheless, two main arguments that could be raised in favour of patenting plant varieties in Nigeria are promotion of private sector investment in plant breeding and technology transfer to the country.⁷³ It is argued that these benefits (and more) are achievable under a *sui generis* system, as will be seen in 3.3 below. As such, while a patent system may favour the fledgling private sector investment in agriculture, it is unsuited to Nigeria for the reasons detailed above.

3.2. Plant Breeder’s Rights System

The UPOV plant breeder’s rights system is a type of *sui generis* plant variety protection system that WTO members may choose to fulfil their TRIPS obligation. Recall from Chapter 1 that UPOV was established to harmonise the different plant variety protection systems in Europe.⁷⁴ Indeed, the European origins and dominance in UPOV is axiomatic.⁷⁵ Although the EU pushed for the incorporation of UPOV as the *sui generis* system during the TRIPS negotiations, this was unsuccessful.⁷⁶ Jayashree Watal notes that one reason UPOV was not included in

⁷² Correa, *Access to Plant Genetic Resources and Intellectual Property Rights* (n 62) 8.

⁷³ See generally arguments in favour of patents for plant varieties in The Crucible Group, *People, Plants and Patents* (n 51) 55-63; Pedro Roffe, ‘Bringing Minimum Global Intellectual Property Standards into Agriculture: The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS)’ in Geoff Tansey and Tasmin Rajotte (eds), *The Future Control of Food: A Guide to International Negotiations and Rules on Intellectual Property, Biodiversity and Food Security* (Earthscan 2008) 63.

⁷⁴ See Chapter 1 on the introduction to UPOV.

⁷⁵ UPOV, *The First Twenty-Five Years of the International Convention for the Protection of New Varieties of Plants: December 2 1961 - December 2 1986* (UPOV 1987) 82-96.

⁷⁶ Watal, *Intellectual Property Rights in the WTO and Developing Countries* (n 6) 140.

Article 27.3(b) of TRIPS was because there was no consensus amongst the Global North about the details of the *sui generis* system.⁷⁷ Watal further notes that another possible reason was that the UPOV 1991 Convention had not yet entered into force during the negotiations.⁷⁸ As such, reference to the UPOV 1978 Convention was considered inadequate, while reference to the UPOV 1991 Convention was considered premature.⁷⁹

The primary focus of this section is the plant breeder's rights under the UPOV 1991 Convention, which is the version currently in force.⁸⁰ Nonetheless, previous versions of the treaty are referred to where necessary. Unlike TRIPS which merely mentions a *sui generis* option without providing details about the system, the UPOV Convention sets out detailed provisions on its plant breeders' rights system.

3.2.1 The UPOV Plant Breeders' Rights Option

Coverage of the Law

The UPOV 1991 Convention covers all plant genera and species.⁸¹ However, it provides a dual track procedure for expanding coverage, depending on whether the contracting state is a new or old member. UPOV members previously party to the 1961, 1972, or 1978 Conventions are required to protect all plant genera and species within five years of the entry into force of the UPOV 1991 Convention.⁸² New UPOV members not party to the 1961, 1972, or 1978 Conventions are also entitled to a gradual expansion. The new members are to apply provisions of the UPOV 1991 Convention to at least 15 plant genera or species from the day they become party to the Convention, and to extend the protection to all plant genera or

⁷⁷ *ibid.*

⁷⁸ *ibid.*

⁷⁹ *ibid.*

⁸⁰ The UPOV 1961 Convention has been revised three times (1972, 1978, and 1991) since it entered into force. Previous versions, including the UPOV 1978 Convention, are closed for membership. International Union for the Protection of New Varieties of Plants, UPOV Lex <http://www.upov.int/upovlex/en/upov_convention.html> accessed 26 June 2017.

⁸¹ UPOV 1991 Convention, art 3.

⁸² UPOV 1991 Convention, art 3.2.

species after 10 years of UPOV membership at the latest.⁸³ Protected plant genera and species were limited to 13 in the UPOV 1961 Convention, and 24 in the UPOV 1978 Convention.

Significantly, the UPOV Convention defines plant variety. As mentioned in 3.1 above, TRIPS does not define the term. Notwithstanding, there is no TRIPS obligation for WTO members to adopt the UPOV definition of plant variety. While the UPOV 1978 Convention did not define plant variety, Article 1 of the UPOV 1991 Convention defines a plant variety as:

a plant grouping within a single botanical taxon of the lowest known rank, which grouping *irrespective of whether the conditions for the grant of a breeder's right are fully met* can be (i) defined by the expression of the characteristics resulting from a given genotype, or combination of genotypes, (ii) distinguished from any other plant grouping by the expression of at least one of the said characteristics, and (iii) considered as a unit with regard to its suitability for being propagated unchanged.⁸⁴

A Working Group was established by the UPOV Conference meeting in plenary on 5 March 1991 to examine the definition of 'variety.'⁸⁵ Denmark, France, Germany, Hungary, Italy, Japan, Poland, Sweden, the United Kingdom (UK), and the EU were invited to delegate a representative to the Working Group.⁸⁶ Chaired by Joel Guiard (from France), the Working Group was mandated to present a technically satisfactory and objective definition of 'variety', taking into consideration the 'relevance of the definition to the relationship between patents and plant variety rights.'⁸⁷ As seen in the *Novartis v Transgenic* example above,

⁸³ UPOV 1991 Convention, art 3.

⁸⁴ Emphasis added. UPOV 1991 Convention, art 1.

⁸⁵ For discussions on the formulation of the 'plant variety' definition in the UPOV 1991 Convention, see UPOV, *Records of the Diplomatic Conference for the Revision of the International Convention for the Protection of New Varieties of Plants*, Geneva, 1991 (UPOV Publication No 346 (E) 1992) 137-40 (*Records of the Diplomatic Conference for the Revision of the International Convention for the Protection of New Varieties of Plants*).

⁸⁶ Noticeably, all the countries in the Working Group were from the Global North.

⁸⁷ UPOV, *Records of the Diplomatic Conference for the Revision of the International Convention for the Protection of New Varieties of Plants* (n 85) 137.

the definition of ‘plant variety’ is an important feature of any plant variety protection system. This is because the definition adopted determines the type and scope of protection afforded to plant innovations. The Working Group generally agreed to adopt the UK’s proposed definition of ‘variety’ as contained in DC/91/23, which covered definitions in (i) and (ii) above, while Mr. Guiard suggested (iii) above.⁸⁸ The definition sought to cover all types of varieties, therefore it did not mention any specific propagation process.

Nonetheless, the Working Group clearly sought to distinguish the definition of variety from the conditions for protecting a new variety.⁸⁹ To achieve this, the Working Group added the provision *irrespective of whether the conditions for the grant of a breeder’s rights are fully met*, as emphasised in the definition above. As such, the definition focuses on the genotype of the new variety; that is, the genetic constitution of the variety. Applying the definition as set out in Article 1 would mean that not all ‘plant varieties’ fulfil the conditions for protection set out in Article 5 of the UPOV 1991 Convention. This is because plant innovations that fall under the definition of ‘plant varieties’ may not meet the further conditions for protection.⁹⁰ In other words, the broadly couched definition of plant varieties covers both ‘distinct’ and ‘stable’ conditions under Article 5 of the UPOV 1991 Convention, but it does not require the variety to be ‘uniform.’ Thus, the UPOV system legally recognises farmers’ varieties, although, as seen below, failure to

⁸⁸ The original delegation of the United Kingdom’s proposal for the definition of variety in DC/91/23 stated that ‘variety means a plant group [of plants] within a single botanical taxon, which group, [irrespective of whether the conditions for the grant of a breeder’s right are fully met,] (a) can be defined by the expression of characteristics [that are the expression of] resulting from a given genotype or combination of genotypes and (b) can be distinguished from other plant groups [of plants of the same botanical taxon] by the expression of at least one of the said characteristics. [A particular variety may be represented by several plants, a single plant or by one or several parts of a plant, provided that such part or parts can be used for the production of entire plants of the variety].’ UPOV, *Records of the Diplomatic Conference for the Revision of the International Convention for the Protection of New Varieties of Plants* (n 85) 105 and 138.

⁸⁹ UPOV, *Records of the Diplomatic Conference for the Revision of the International Convention for the Protection of New Varieties of Plants* (n 85) 139.

⁹⁰ Rangnekar, *Access to Genetic Resources, Gene-Based Inventions and Agriculture* (n 18) 29.

meet the ‘uniformity’ condition means that these farmers’ varieties cannot be protected under UPOV.⁹¹

Conditions for Protection

While the definition of plant varieties above may be interpreted to include farmers’ varieties, the ‘new’, ‘distinct’, ‘uniform’, and ‘stable’ conditions for protection under the UPOV 1991 Convention clearly exclude farmers’ varieties.⁹² A plant variety is new if it has not been previously offered for sale or commercialised, either for earlier than one year in the country where the application is filed, or four years in other contracting member states.⁹³ Again, where TRIPS does not define the ‘novelty’ condition for patents, the UPOV Convention expressly sets out a definition. However, the standard for determining novelty under UPOV focuses on the commercial novelty, which is considered a low threshold for assessing novelty.⁹⁴ Notably, the novelty requirement is one of the barriers to the protection of farmers’ varieties under UPOV. As seen in Chapter 2, farmers’ varieties in Nigeria are commonly known varieties in a particular locality or farming community which have been in existence for a long time.⁹⁵

Distinct plant varieties are clearly distinguishable from other varieties commonly known at time of application.⁹⁶ Breeders can protect varieties that are minimally different from existing varieties provided they are clearly distinguishable from the other varieties. Put differently, breeders can protect ‘cosmetically differentiated varieties.’⁹⁷ Thus, the distinct condition also provides a low threshold when compared to inventive step in patents. For example, the colour of an apple fruit can clearly distinguish it from other apple varieties. This colour difference would fulfil

⁹¹ Dan Leskien and Michael Flitner, ‘Intellectual Property Rights and Plant Genetic Resources: Options for a Sui Generis System’ (Issues in Genetic Resources No 6, International Plant Genetic Resources Institute, June 1997) 48.

⁹² Conditions for the Grant of Breeder’s Right: UPOV 1991 Convention, art 5.

⁹³ UPOV 1991 Convention, art 6.

⁹⁴ Leskien and Flitner, ‘Intellectual Property Rights and Plant Genetic Resources’ (n 91) 50; Rangnekar, *Access to Genetic Resources, Gene-based Inventions and Agriculture* (n 18) 38.

⁹⁵ See Chapter 2 for discussion on farmers’ varieties in Nigeria.

⁹⁶ UPOV 1991 Convention, art 7.

⁹⁷ Rangnekar, *Access to Genetic Resources, Gene-based Inventions and Agriculture* (n 18) 38.

the ‘distinct’ condition. As such, the UPOV 1991 Convention does not focus on the agronomic value or inventive process of developing the new variety. Indeed, the UPOV 1991 Convention excluded the phrase ‘by one or more important characteristics’ which was provided in the UPOV 1978 Convention to ensure that only distinct varieties with agronomic value were protected.⁹⁸

A plant variety is uniform if, subject to normal variations in its propagation, its relevant characteristics remain sufficiently uniform.⁹⁹ This definition recognises the different processes of plant propagation by adding that the uniformity condition is assessed based on a comparison with other varieties of the same species.¹⁰⁰ Similar to the ‘distinct’ condition, the legal requirement of uniformity pays less attention to the agronomic qualities. Instead, it rewards the narrowing of plant genetic diversity.¹⁰¹ One key criticism of the ‘uniformity’ condition raised by activists such as Cary Fowler and Pat Mooney is that it contributes to the erosion of genetic diversity.¹⁰²

Closely linked to ‘uniformity’ is the ‘stability’ condition. Uniform plant varieties are usually stable as well.¹⁰³ The ‘stability’ condition requires the relevant characteristics of the plant variety to remain the same after repeated propagation or, in the case of a particular cycle of propagation, at the end of each such cycle.¹⁰⁴ The stability condition requires investing increased resources in developing new

⁹⁸ Article 6.1(a) of the UPOV 1978 Convention states: ‘... whatever may be the origin, artificial or natural, of the initial variation from which it has resulted, the variety must be clearly distinguishable by one or more important characteristics from any other variety whose existence is a matter of common knowledge at the time when protection is applied for....’

⁹⁹ UPOV 1991 Convention, art 8.

¹⁰⁰ Graham Dutfield, ‘Turning Plant Varieties into Intellectual Property: The UPOV Convention’ in Geoff Tansey and Tasmin Rajotte (eds), *The Future Control of Food: A Guide to International Negotiations and Rules on Intellectual Property, Biodiversity and Food Security* (Earthscan 2008) 35.

¹⁰¹ On uniformity of plant varieties, see generally, Cary Fowler and Pat Mooney, *Shattering: Food, Politics, and the Loss of Genetic Diversity* (The University of Arizona Press 1990).

¹⁰² *ibid.*

¹⁰³ UPOV, *General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants* (UPOV TG/1/3, 19 April 2002) 23 <http://www.upov.int/export/sites/upov/publications/en/tg_rom/pdf/tg_1_3.pdf> accessed 25 June 2017 (*General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plant*).

¹⁰⁴ UPOV 1991 Convention, art 9.

varieties; thus, it is mainly fulfilled by industrialised breeders and seed companies who have the resources required for such breeding.¹⁰⁵ A combination of the uniform and stable conditions also contributes to barring the protection of farmers' (unstable and assorted) varieties under UPOV.

The distinctiveness, uniformity, and stability (DUS) conditions, otherwise referred to as the technical criteria for plant breeder's rights, are often examined collectively.¹⁰⁶ Notably, the UPOV office is clear that contracting parties are to strictly adhere to the novelty and DUS conditions, as the grant of breeder's rights is not subject to further – or other – conditions.¹⁰⁷ In other words, despite the differences in farming systems around the world, all UPOV members are required to adopt the same conditions for protecting new varieties. In sum, while the farmers' varieties in Nigeria qualify as plant varieties under UPOV, they do not meet the DUS conditions for protection.

Scope of Protection

Plant breeder's rights are granted for a minimum period of 20 years for plants and 25 years for trees and vines.¹⁰⁸ The scope of protection shapes a plant breeder's technological and economic control over the new variety. Under the UPOV 1991 Convention, plant breeders have extensive rights over their propagating material, harvested material, and essentially derived varieties (EDVs).¹⁰⁹ Plant breeder's rights on propagating material of the protected variety extends to production or reproduction (multiplication), conditioning for the purposes of propagation, offering for sale, selling, or other marketing, exporting, importing, and stocking for any of the abovementioned purposes. For harvested materials, the right extends to entire plants and parts of plants, as well as to products that are made directly

¹⁰⁵ Rangnekar, *Access to Genetic Resources, Gene-based Inventions and Agriculture* (n 18) 39.

¹⁰⁶ See generally, UPOV, *General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants* (n 103).

¹⁰⁷ UPOV 1991 Convention, art 5(2).

¹⁰⁸ UPOV 1991 Convention, art 19.

¹⁰⁹ For Scope of Breeder's Right, see UPOV 1991 Convention, art 14. For Plant Breeder's Right, see UPOV 1991 Convention, ch 5, arts 14-19.

from harvested material; while for EDVs, the rights extend to varieties derived from the protected varieties. In particular, the provision on EDVs sought to address the criticism that the commercial ‘novelty’ provision promotes cosmetic breeding.¹¹⁰

Despite the extensive scope of breeder’s rights under the UPOV 1991 Convention, there are three compulsory exceptions to breeder’s rights (i) acts done privately and for non-commercial purposes;¹¹¹ (ii) acts done for experimental purposes;¹¹² and (iii) acts done for the purposes of breeding other varieties (subject to provisions on EDVs).¹¹³ In particular, the second and third compulsory exceptions are important to promote plant breeding, as plant breeders often rely on existing plant materials to develop new varieties. However, a limitation of these compulsory exceptions is breeder’s rights to EDVs highlighted above. Commercialisation of EDVs require prior authorisation from the breeder with rights to the initial protected varieties.

In addition to the compulsory exceptions, the UPOV 1991 Convention provides an optional exception which allows members to restrict breeders’ rights, provided it is within reasonable limits and subject to the safeguarding of legitimate interests of the breeder.¹¹⁴ This exception allows farmers to use the harvested products of protected varieties planted on their own holdings for further propagation. First, it is important to note that this exclusion is optional. This means that UPOV members are not obligated to provide exclusions for farmers to reuse protected products of harvests. This provision is one of the key differences between the UPOV 1978 Convention and the UPOV 1991 Convention. Second, the UPOV 1991 Convention fails to define ‘within reasonable limits’ and ‘subject to the safeguarding of the legitimate interests of the breeder.’

¹¹⁰ See discussion on conditions for protection under 3.2.1 above.

¹¹¹ UPOV 1991 Convention, art 15.1(i).

¹¹² UPOV 1991 Convention, art 15.1(ii).

¹¹³ UPOV 1991 Convention, art 15.1(iii).

¹¹⁴ UPOV 1991 Convention, art 15(2).

In Europe, ‘legitimate interests of the breeder’ is interpreted as ensuring ‘the breeder receives equitable remuneration.’¹¹⁵ The Community Plant Variety Rights (CPVR) authorises farmers’ use of propagating material of a protected variety (except hybrid or synthetic variety) for purposes of propagation on their own holding.¹¹⁶ However, Article 14(2) of the CPVR limits this exception to particular agricultural plant species.¹¹⁷ Furthermore, Article 14(3) of the CPVR provides that farmers pay an equitable remuneration to the breeder lower than the amount charged for the licensed production of propagating material of the variety in the area. Nevertheless, small-scale farmers are exempted from this.¹¹⁸

While ‘legitimate interests of the breeder’ is not defined in the US Plant Variety Protection Act 1970 (PVPA), the US Supreme Court in *Asgrow v Winterbroer* clarifies the extent to which farmers can save and reuse seeds in the US.¹¹⁹ The US Supreme Court in *Asgrow v Winterbroer* held that under the PVPA, farmers can only save and sell for reproductive purposes the amount of seeds of a protected variety necessary for replanting on their own farms.¹²⁰ Prior to the case, it was generally interpreted that farmers were within the farmers’ exemption if they saved, reused, or sold 49 per cent of produce from planting a specific protected variety – this practice was known as ‘brown-bagging.’¹²¹ The *Asgrow* case which informed the interpretation of the PVPA was part of the US’ process of conforming to the UPOV 1991 Convention.

¹¹⁵ Graham Dutfield, *Food, Biological Diversity and Intellectual Property: The Role of the International Union for the Protection of New Varieties of Plants (UPOV)* (Quaker United Nations Office, February 2011) Global Economic Issue Publications, Intellectual Property Issue Paper No 1, 9 (*Food, Biological Diversity and Intellectual Property*).

¹¹⁶ Council Regulation (EC) 2100/94, latest amendment Council Regulation (EC) 15/2008 of 20 December 2007 on Community Plant Variety Rights (Community Plant Variety Rights), art 14.

¹¹⁷ The specified agricultural plant species divided under fodder plants, cereals, potatoes, and oil and fibre plants are set out Article 14(2) (a) to (d) of the Community Plant Variety Rights.

¹¹⁸ Small-scale farmers are defined in Article 14(3) of the Community Plant Variety Rights as farmers who do not grow plants on an area bigger than the area which would be needed to produce 92 tonnes of cereals, and for other plant species, farmers who meet comparable criteria.

¹¹⁹ Plant Variety Protection Act (PVPA), Title 7, ss 2321-582; *Asgrow Seed Co v Denny Winterboer and Becky Winterboer* (1995) 513 US 173.

¹²⁰ *Asgrow Seed Co v Winterboer* (n 119).

¹²¹ Debra Blair, ‘Intellectual Property Protection and its Impact on the US Seed Industry’ (1999) 4 Drake Journal of Agricultural Law 297, 313; Dutfield, ‘Turning Plant Varieties into Intellectual Property’ (n 100) 39; Carlos M Correa, *Plant Variety Protection in Developing Countries: A Tool for Designing a Sui Generis Plant Variety Protection System: An Alternative to UPOV 1991* (APBEBES 2015) 7 (*Plant Variety Protection in Developing Countries*).

Table 3.1: Scope of Protection, UPOV 1978 and UPOV 1991 Conventions

	UPOV 1978 Convention	UPOV 1991 Convention
Breeder's authorisation is required for:	Production for sale Offering for sale Marketing	Production or reproduction Conditioning for the purposes of propagation Offering for sale Selling or other marketing Exporting Importing Stocking for any of these purposes
Breeder's rights apply to:	Propagating material	Propagating material Harvested material, including entire plants and parts of plants Any product made directly from the harvested material Acts in respect of harvested materials, or certain products made directly from harvested materials if obtained through the unauthorized use of propagating materials or harvested material of protected varieties Essentially derived varieties
Farmers' right to save seed:	Implicit right, it is not prohibited	Optional. Contracting parties may allow farmers save harvested seed of protected varieties and reuse on their own holding, provided it is within reasonable limits and it safeguards the legitimate interests of the breeder

Sources: UPOV 1978 and UPOV 1991 Conventions

Although UPOV started with just seven European countries in 1961, its membership had grown to 74 by 2016.¹²² UPOV members, now both from the Global North and Global South, have different seed systems and farming practices. Debates on UPOV are explored below, with the aim of extracting lessons for Nigeria.

3.2.2. Debates on Plant Breeders' Rights System: Lessons for Nigeria

UPOV states that its mission is to promote an effective plant variety protection system to encourage the development of new plant varieties for the benefit of society.¹²³ In reality, what UPOV promotes is the commodification of plant varieties to favour commercial breeders. As seen above, its conditions for protection provide low thresholds for assessments. While UPOV is correct in clarifying that it seeks to encourage the development of new plant varieties, perhaps it is more accurate to state that it focuses on promoting the commercialisation of new plant varieties.

To promote awareness about its plant breeder's rights system, UPOV released a report on the impact of plant variety protection in five case study countries – Argentina, China, Kenya, Poland, and the Republic of Korea.¹²⁴ As one would expect, the report pointed out the benefits of plant variety protection systems, such as increased breeding activities and programmes, increased number of new varieties, increased applications by foreign breeders, and improved access to foreign varieties.¹²⁵ For example, in the 10-year period following Argentina's revision of its plant variety protection system and accession to UPOV (from 1994

¹²² In addition to the existing UPOV members, 15 states and one intergovernmental organisation have initiated the procedure for acceding to the UPOV Convention, and 25 states and one intergovernmental organisation have been in contact with the UPOV office to assist with developing their plant variety protection systems based on UPOV. See UPOV, *Members of the International Union for the Protection of New Varieties of Plants, International Convention for the Protection of New Varieties of Plants UPOV Convention (1961), as revised at Geneva (1972, 1978, and 1991)* Status on 5 April 2016

<<http://www.upov.int/export/sites/upov/members/en/pdf/pub423.pdf>> accessed 28 June 2017.

¹²³ UPOV Mission Statement.

¹²⁴ UPOV, *UPOV Report on the Impact of Plant Variety Protection* (UPOV 2005).

¹²⁵ *ibid* 88-90.

to 2003), the average number of plant breeder's rights granted to foreigners was 62. This number tripled from 17, which was the average number of rights granted to foreign breeders (from 1984 to 1993) based on bilateral agreements in place before the UPOV-styled plant variety protection system. A close reading of the report shows how the UPOV-styled model focuses on the commercial plant breeders and investments in a few commercially important crop species.

Five concerns from the above examination of the UPOV 1991 Convention from a Global South perspective are as follows.¹²⁶ First, the focus on commercial plant breeders overlooks the small-scale farmers who dominate the farming and seed systems in the Global South. Recall that Chapter 2 shows that over 90 per cent of seeds are sourced from the informal seed sector.¹²⁷ UPOV's primary focus on seed companies (commercial plant breeders) is evidenced by its DUS conditions for protection which farmers' varieties cannot meet. Although UPOV states that it encourages breeding of new plant varieties for all types of farmers, the DUS conditions clearly exclude farmers' (unstable and assorted) varieties.¹²⁸

Second, the possibility of limiting farmers' ability to save and reuse seeds further disadvantages small-scale farmers.¹²⁹ It reinforces UPOV's primary focus on 'plant breeders', as it provides that the farmers' ability to save and reuse seed is subject to the legitimate interests of the plant breeder.¹³⁰ As seen in Chapter 2, the informal seed system is a main source of seeds in Nigeria.¹³¹ This informal seed system is also predominant around the Global South.¹³² However, the small-scale

¹²⁶ On further arguments against UPOV 1991 Convention from a Global South perspective, see generally: Correa, *Plant Variety Protection in Developing Countries* (n 121).

¹²⁷ See Chapter 2.

¹²⁸ On UPOV attempts to encourage breeding, see UPOV, *Seminar on Plant Variety Protection and Technology Transfer: The Benefits of Public-Private Partnership* (Geneva, 11-12 April 2011) <http://www.upov.int/edocs/pubdocs/en/upov_pub_357_3.pdf> accessed 28 June 2017.

¹²⁹ UPOV 1991 Convention, art 15(2).

¹³⁰ UPOV 1991 Convention, art 15 (2).

¹³¹ See Chapter 2.

¹³² N P Louwaars, R Tripp, D Eaton, V Henson-Apollonio, R Hu, M Mendoza, F Muhhuku, S Pal, and J Wekundah, 'Impacts of Strengthened Intellectual Property Rights Regime on the Plant Breeding Industry in Developing Countries: A Synthesis of Five Case Studies' (Report Commissioned by the World Bank, February 2005) <https://www.iprsonline.org/resources/docs/LouwaarsCGN_Plants_05.pdf> accessed 28 June 2017.

farmers' practice of saving seed is not limited to the Global South. Indeed, Thor Kofoed, the keynote speaker in the UPOV symposium on the benefits of plant variety protection for farmers and growers, states that is important to allow farmers to continue saving seed.¹³³ He pointed out that:

In Europe, we have been talking about the small farmers' exemption. Of course I can understand that breeders want to have the royalties from all the seed that has been sold to the farmers, but let these farmers continue with farm-saved seed.¹³⁴

Third, the extensive breeders' rights which even covers EDVs is concerning because it limits the ability of farmers to adapt protected varieties to local conditions. Recall that EDVs are varieties that are predominantly derived from the initial protected varieties.¹³⁵ Paradoxically, while breeders have rights over protected varieties used as initial sources of derivation for other varieties (EDVs), the use of farmers' varieties to develop new breeders' varieties are neither recognised nor rewarded.¹³⁶ In other words, plant breeders can freely use farmers' varieties to develop new varieties, but farmers are prohibited from freely using and adapting protected varieties to local conditions.¹³⁷ For example, while breeders can freely access farmers' varieties in Nigeria to develop new varieties which are subsequently protected, applying the EDVs provision restricts farmers' ability to use, adapt, or develop protected varieties. In essence, EDVs create double standards.¹³⁸

¹³³ UPOV, *Symposium on the Benefits for Plant Variety Protection for Farmers and Growers* (Geneva, 2 November 2012) 9 <http://www.upov.int/edocs/pubdocs/en/upov_pub_357_4.pdf> accessed 28 June 2017.

¹³⁴ *ibid.*

¹³⁵ For EDVs, see UPOV 1991 Convention, art 14(5).

¹³⁶ Correa, *Plant Variety Protection in Developing Countries* (n 121) 31.

¹³⁷ Normita G Ignacio, Joy Angelica Santos-Doctor, and Rosette Ferrer, 'Essentially Derived Varieties and the Perspective of Farmer-Breeders' (Contribution to the UPOV Seminar on Essentially Derived Varieties, 22 October 2013) <<http://www.apbrebes.org/files/seeds/Essentially%20derived%20varieties%20and%20the%20perspective%20of%20farmer.pdf>> accessed 24 July 2017.

¹³⁸ Correa, *Plant Variety Protection in Developing Countries* (n 121) 31.

Fourth, and related to the third concern, is UPOV's rigid position of rejecting the incorporation of provisions from other international treaties relevant to plant variety protection, such as the CBD or the ITPGRFA. UPOV membership is conditional upon a country designing or reforming its national legislation to conform with the UPOV Convention.¹³⁹ In particular, the UPOV Council has to approve of the national legislation before the instrument of accession is deposited.¹⁴⁰ While UPOV recognises the CBD and the ITPGRFA, it maintains that they are international treaties which serve functions that are different from UPOV.¹⁴¹ UPOV maintains that at the national level, countries can have separate laws covering issues such as access to genetic resources and farmers' rights issues covered in the CBD and the ITPGRFA. For example, UPOV's former Vice Secretary-General Barry Greengrass affirms that farmers' rights are not within the purview of UPOV:

The subject of farmers' rights is mainly the business of the FAO and its Undertaking on Plant Genetic Resources ... It is up to the institutions that are concerned with farmers' rights to explain what farmers' rights mean and what rights should be given to what farmers. It is not UPOV's business.¹⁴²

It is argued that while it may not be UPOV's business to define or grant farmers' rights, it is the business of a country to secure the interests of its peoples, which includes designing legal systems suited to its realities. The UPOV position misses the point of the access to genetic resources principles and farmers' rights which

¹³⁹ UPOV 1991 Convention, art 30(2).

¹⁴⁰ UPOV 1991 Convention, art 34(3).

¹⁴¹ UPOV, 'Access to Genetic Resources and Benefit-Sharing: Reply of UPOV to the Notification of June 26 2003 from the Executive Secretary of the Convention on Biological Diversity (CBD)' (adopted by the Council of UPOV at its 37th ordinary session on 23 October 2003) <http://www.upov.int/export/sites/upov/news/en/2003/pdf/cbd_response_oct232003.pdf> accessed 29 June 2017.

¹⁴² UPOV, *UPOV National Seminar on the Nature and Rationale for the Protection of New Varieties of Plants under the UPOV Convention, Manila, December 1994* (UPOV 1995) 27, as quoted in GAIA/GRAIN, 'Ten reasons not to join UPOV: Global Trade and Biodiversity in Conflict' (15 May 1998) <<https://www.grain.org/article/entries/1-ten-reasons-not-to-join-upov#18>> accessed 04 July 2017.

seek to counterbalance the extensive breeders' rights. As will be seen below, incorporating these legal principles in a plant variety protection system along with breeders' rights not only rewards small-scale farmers' contributions and curtails extensive breeders' rights, but also safeguards their traditional farming practices and livelihood.¹⁴³ Furthermore, the UPOV suggestion of having separate national legislations for breeder's rights and other issues – such as farmers' rights and benefit sharing – would at the minimum lead to further fragmentation of laws at the national level.¹⁴⁴ Recall from Chapter 2 that there is lack of synergy amongst the different government institutions relevant to plant variety protection in Nigeria.¹⁴⁵

Fifth is the concern that UPOV as well as the US and EU promote harmonised systems of protecting plant varieties around the world based on the UPOV 1991 Convention, yet socio-economic realities vary from country to country.¹⁴⁶ As such, promoting a single way of conceptualising and protecting plant varieties would certainly benefit some countries more than others. For instance, it would benefit countries with advanced breeding facilities and industrialised farming practices, along with fully equipped national IPRs offices to carry out the prerequisite examinations and tests for registering new plant varieties. In sum, it should not be forgotten that while plant breeder's rights under the UPOV 1991 Convention is 'a' type of *sui generis* system for protecting plant varieties, it is not 'the' (only) *sui generis* system.

Policy interventions warn against Global South countries joining the UPOV 1991 Convention.¹⁴⁷ In particular, these policy interventions agree that UPOV is not a

¹⁴³ See 3.3 below.

¹⁴⁴ See the former UPOV Vice-Secretary General Barry Greengrass's quote above.

¹⁴⁵ See Chapter 2.

¹⁴⁶ Graham Dutfield, *Intellectual Property and the Life Sciences Industries: A Twentieth Century History* (Ashgate 2003)192; see also Chapter 4.

¹⁴⁷ The Crucible Group, *People, Plants and Patent* (n 51); The Crucible II Group, *Seeding Solutions: Volume 1* (n 50); The Crucible II Group, *Seeding Solutions: Volume 2, Policy Options for Genetic Resources: People Plants and Patents Revisited* (International Development Research Centre 2001) (*Seeding Solutions: Volume 2*); Leskien and Flitner, 'Intellectual Property Rights and Plant Genetic Resources: Options for a Sui Generis System' (n 91); Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy* (2002); United

universal regime that suits all countries. Rather, they recommend that these countries can develop alternative *sui generis* systems tailored to their national realities.¹⁴⁸ These realities include seed systems, small-scale farmers' livelihoods, and IPRs institutional capacity.¹⁴⁹ Nothing prevents Global South countries that have reservations about UPOV from heeding these policy interventions, as Article 27.3(b) of TRIPS gives WTO members the latitude to imaginatively design *sui generis* systems as explored below. What is more, a country can borrow provisions from UPOV Conventions when designing a plant variety protection system without becoming party to UPOV. In fact, as will be seen below and in Chapter 4, even countries with creative *sui generis* systems borrow provisions from UPOV, especially the UPOV 1978 Convention.

3.3. Creative *Sui Generis* Plant Variety Protection System

A *sui generis* system is one of the options for protecting plant variety under TRIPS. As seen above, the UPOV plant breeder's rights system is not 'the only' type of *sui generis* system as TRIPS does not specify or mention UPOV. While TRIPS requires the *sui generis* system to be an IPRs system, it does not restrict the incorporation of non-IPRs provisions.¹⁵⁰ Unlike the UPOV option which shapes and monitors national laws, the creative *sui generis* option gives a country the latitude to shape its own laws as it deems fit. This latitude is particularly useful for Global South WTO members; it allows them to incorporate provisions from the ITPGRFA and the CBD that are beneficial to their small-scale farmers and national interests.

Nations Development Programme (UNDP), 'Towards a Balanced "Sui Generis" Plant Variety Regime: Guidelines to Establish a National PVP Law and an Understanding of TRIPS-plus Aspects of Plant Rights' (UNDP 2008); Oliver De Schutter (Special Rapporteur on the right to food), *Seed Policies and the Right to Food: Enhancing Agrobiodiversity and Encouraging Innovation* (United Nations General Assembly, A/64/170, 2009); Anja Christinck and Morten Walloe Tvedt, *The UPOV Convention, Farmers' Rights and Human Rights: An Integrated Assessment of Potentially Conflicting Legal Frameworks* (Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH 2015); Correa, *Plant Variety Protection in Developing Countries* (n 121).

¹⁴⁸ *ibid.*

¹⁴⁹ For example, Correa, *Plant Variety Protection in Developing Countries* (n 121) 77. IPRs institutional capacity includes human and financial resources in IPRs offices as well as judicial capacity.

¹⁵⁰ Leskien and Flitner, 'Intellectual Property Rights and Plant Genetic Resources' (n 91) 30.

Before discussing the coverage of the law, conditions for protection, and scope of protection under a creative *sui generis* system, the next section explores farmers' rights, access and benefit sharing, as well as disclosure of origin, which are legal principles drawn from the ITPGRFA, the CBD, and the Genetic Resources treaty currently under negotiation in WIPO. These principles can be incorporated in a *sui generis* system.

3.3.1. Farmers' Rights, Access-Benefit Sharing, Disclosure of Origin

As mentioned in Chapter 1, a variety of actors both from the Global South and Global North raised concerns about the extension of IPRs to plant varieties.¹⁵¹ These developments culminated in the introduction of farmers' rights, along with access and benefit sharing in the ITPGRFA and the CBD.¹⁵² The actors involved in pushing for these alternative legal principles employed the regime shifting strategy.¹⁵³ Laurence Helfer notes that regime shifting enables state and non-state actors to relocate law-making processes to international forums that favour their concerns and interests.¹⁵⁴ These alternative legal principles not only expand the legal principles, institutions, and actors relevant to plant variety protection, they

¹⁵¹ As discussed in Chapter 1, actors involved in the pushing for farmers' rights in the early 1980s include countries such as Mexico, India, and Ethiopia, civil society organisations (CSOs) such as the Rural Advancement Foundation International (RAFI), GRAIN, and Community Technology Development Trust (CTDT). Patrick Mooney notes that the civil society activists in the early years of pushing for counter-movements and counter-narratives to patents and plant breeder's rights included himself, Cary Fowler, Hope Shand, Henk Hobbelink, Renee Vellve, Camila Montecinos, Rene Salazar, Vandana Shiva, Andrew Mushita, Patrick Mulvany, Liz Hoskins, Neth Dano, and Edward Hammond. Patrick Mooney, 'International Non-governmental Organizations: The Hundred Year (or so) Seed War – Seeds, Sovereignty and Civil Society – A Historical Perspective on the Evolution of "The Law of the Seed"' in Christine Frison, Francisco Lopez and Jose T. Esquinas-Alcazar (eds), *Plant Genetic Resources and Food Security: Stakeholder Perspectives on the International Treaty on Plant Genetic Resources for Food and Agriculture* (Earthscan 2011) 143. For the CBD, the Group of 77 (+China), led by countries such as Brazil, India, Indonesia, Kenya, Thailand, and Malaysia actively lobbied for access and benefit sharing, while the World Wildlife Fund was the main CSO that participated in the negotiations. Veit Koester, 'The Biodiversity Convention Negotiation Process and Some Comments on the Outcome' (1997) 27(3) *Environmental Policy and Law* 175, 183-85.

¹⁵² The International Undertaking discussed in Chapter 1 was a predecessor to the ITPGRFA.

¹⁵³ See generally, Laurence Helfer, 'Regime Shifting: The TRIPS Agreement and New Dynamics of International Intellectual Property Law Making' (2004) 29 *Yale Journal of International Law* 1; Laurence R Helfer, 'Regime Shifting in the International Intellectual Property System' (2009) 7(1) *Perspectives on Politics* 39; Raustiala and Victor, 'The Regime Complex for Plant Genetic Resources' (n 5).

¹⁵⁴ Helfer, 'Regime Shifting in the International Intellectual Property System' (n 153) 39.

also create outcomes that have effects in other forums. For example, the farmers' rights alongside access and benefit sharing principles in the ITPGRFA and CBD broaden the possibilities for implementing other agreements such as the *sui generis* provision in TRIPS.

Farmers' Rights

Farmers' rights counter-balance patents and plant breeder's rights.¹⁵⁵ The farmers' rights principle, first endorsed by the Food and Agriculture Organisation of the United Nations (FAO) in 1989, recognises and rewards farmers' role in conserving and developing genetic resources.¹⁵⁶ Under FAO Resolution 5/89, farmers' rights are defined as 'rights arising from the past, present and future contributions of farmers in conserving, improving and making available plant genetic resources, used in plant breeding.'¹⁵⁷ FAO Resolution 3/91 further expanded on farmers' rights by providing that it is to be implemented through an international fund to support plant genetic conservation and utilisation programmes, particularly in the Global South.¹⁵⁸ These FAO Resolutions were adopted as annexes to the International Undertaking on Plant Genetic Resources (International Undertaking).

¹⁵⁵ See Chapter 1 on origins of plant variety protection. For detailed discussions on farmers' rights, see Craig Borowiak, 'Farmers' Rights: Intellectual Property Regimes and the Struggle over Seeds' (2004) 32(4) *Politics and Society* 511; Svanhild-Isabelle Batta Bjornstad, 'Breakthrough for "the South"? An Analysis of the Recognition of Farmers' Rights in the International Treaty on Plant Genetic Resources for Food and Agriculture' (The Fridtjof Nansen Institute Report 13/2004); Regine Andersen, 'Historical Context: Evolving International Cooperation on Crop Genetic Resources' in Michael Halewood (ed), *Farmers' Crop Varieties and Farmers' Rights: Challenges in Taxonomy and Law* (Earthscan 2016) 99-128; Regine Andersen, 'Farmers' Rights: Evolution of the International Policy Debate and National Development' in Michael Halewood (ed), *Farmers' Crop Varieties and Farmers' Rights: Challenges in Taxonomy and Law* (Earthscan 2016) 129-151; Farmers Rights Resource Pages for Decision-Makers and Practitioners <<http://www.farmersrights.org/>> accessed 09 July 2017.

¹⁵⁶ Food and Agricultural Organisation of the United Nations (FAO), Commission on Genetic Resources for Food and Agriculture, 'Milestones in the History of the Commission on Genetic Resources for Food and Agriculture' <<http://www.fao.org/nr/cgrfa/cgrfa-about/cgrfa-history/en/>> accessed 29 June 2017; FAO, *International Treaty on Plant Genetic Resources for Food and Agriculture: The Development of Farmers Rights in the Context of the International Undertaking and Article 9* (IT/GB-2/07/Inf.6, August 2007) 2-3 <<http://www.fao.org/3/a-be152e.pdf>> accessed 29 June 2017.

¹⁵⁷ FAO Conference, Farmers Rights' Resolution 5/89, Annex to the International Undertaking on Plant Genetic Resources.

¹⁵⁸ FAO Conference, Farmers Rights' Resolution 3/91, Annex to the International Undertaking on Plant Genetic Resources.

However, the International Undertaking is a non-binding international agreement.¹⁵⁹

It was the ITPGRFA, a legally binding international treaty adopted by the FAO Conference in 2001 that stamped farmers' rights into the legal architecture for plant varieties.¹⁶⁰ Yet the ITPGRFA does not define farmers' rights. Regine Andersen notes that the ITPGRFA negotiators were unable to agree on a definition of farmers' rights because farmers' situations and interests differ from country to country.¹⁶¹ As such, perceptions on farmers' rights also differ.¹⁶² Nevertheless, while the ITPGRFA does not set out an official definition of farmers' rights, it establishes common grounds for understanding the principle.

Article 9.1 of the ITPGRFA begins by stating that contracting parties recognise the enormous contribution that farmers and farming communities have made and continue to make to the conservation and development of plant genetic resources. The open-endedness of this provision means that 'farmers' rights' is not limited only to the provisions set out in Article 9 of the ITPGRFA. Legal provisions that reflect the contributions of farmers and farming communities to the conservation and development of plant genetic resources may also be referred to as farmers' rights. Articles 9.2 and 9.3 of the ITPGRFA go on to set out four categories of farmers' rights provisions. First, it provides for the right to protect traditional knowledge relevant to plant genetic resources for food and agriculture.¹⁶³ Second, it provides for the right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture.¹⁶⁴ Third, it provides for the right to equitably participate in sharing benefits arising from the utilisation of plant genetic resources for food

¹⁵⁹ See Chapter 1 on the introduction of the International Undertaking. See also International Undertaking on Plant Genetic Resources, Resolution 8/83.

¹⁶⁰ The ITPGRFA, which was adopted in November 2001, entered into force in June 2004.

¹⁶¹ Andersen, 'Farmers' Rights: Evolution of the International Policy Debate and National Implementation' (n 155) 131.

¹⁶² *ibid.*

¹⁶³ ITPGRFA, art 9(2).

¹⁶⁴ ITPGRFA, art 9(2).

and agriculture.¹⁶⁵ Fourth, it provides for farmers' rights to save, use, exchange, and sell farm-saved seed or propagating material, subject to national law and as appropriate.¹⁶⁶

The first farmers' right provision above may be interpreted as a form of IPRs because it provides for the protection of traditional knowledge relevant to plant genetic resources. However, the three other rights are non-IPRs, as they do not provide exclusive rights over an intangible property, but rather set out measures of how to achieve farmers' rights. The right to participate in decision-making is closely linked with the food sovereignty movement, which promotes the rights of peoples to define their own food and agricultural systems.¹⁶⁷ Access and benefit sharing is closely linked with the CBD, which is discussed below.¹⁶⁸ The right to save, use, exchange, and sell farm-saved seed or propagating material listed provides an exception to plant breeders' rights provisions.

Although the ITPGRFA does not specifically mention any other international treaty for plant varieties apart from the CBD, its preamble delineates its relationship with other international treaties relevant to plant variety protection. First, it states that the ITPGRFA and other international agreements relevant to it should be mutually supportive, with a view to sustainable agriculture and food security.¹⁶⁹ Second, the ITPGRFA should not be interpreted as implying to change in any way the rights and obligations of contracting parties under other international agreements.¹⁷⁰ Third, the ITPGRFA does not intend to create a hierarchy between it and other international treaties.¹⁷¹ However, the ITPGRFA provides that the responsibility for realising farmers' rights rests with national

¹⁶⁵ ITPGRFA, art 9(2).

¹⁶⁶ ITPGRFA, art 9(2).

¹⁶⁷ Declaration of Nyeleni, Selingue, Mali (27 February 2007) <<http://nyeleni.org/spip.php?article290>> accessed 09 July 2017; Raj Patel, 'What does Food Sovereignty Look Like?' (2009) 36(3) *Journal of Peasant Studies* 663, 663.

¹⁶⁸ See discussion on access and benefit sharing below. The ITPGRFA and the CBD have interrelated objectives and are closely linked. The ITPGRFA specifically states that its objectives will be achieved in harmony with the CBD. ITPGRFA, art 1(2).

¹⁶⁹ ITPGRFA, Preamble.

¹⁷⁰ ITPGRFA, Preamble.

¹⁷¹ ITPGRFA, Preamble.

governments in accordance with their needs and proprieties.¹⁷² Unlike TRIPS that sets out deadlines, the ITPGRFA leaves its implementation open to the contracting parties' discretion. Similarly, unlike UPOV which provides specific standards for 'plant breeders' rights', farmers' rights in the ITPGRFA is subject to national interpretations. Keith Aoki and Kennedy Luvai argue that by leaving contracting parties the choice of implementing farmers' rights, the ITPGRFA is a 'vague commitment' to the aspiration for farmers' rights.¹⁷³

Farmers' rights in the ITPGRFA appear to be a small achievement for the Global South actors and international activists that pushed for it. The scope of farmers' rights is yet to be clearly defined, while its conceptualisation and enforcement still pose challenges. Nonetheless, the ITPGRFA reinvigorated global debates on farmers' rights.¹⁷⁴ Only a few countries such as India, as will be seen in Chapter 5, have attempted to incorporate farmers' rights.¹⁷⁵ The African Model Law also sets out guidelines for incorporating farmers' rights provisions in national legislations.¹⁷⁶

Access and Benefit Sharing

While the ITPGRFA provides for farmers' rights as seen above, both the CBD and the ITPGRFA set out access and benefit sharing principles. Access and benefit sharing refers to the means through which genetic resources may be accessed and how the benefits resulting from their use are shared between the parties that use the

¹⁷² ITPGRFA, art 9.2.

¹⁷³ Keith Aoki and Kennedy Luvai, 'Reclaiming 'Common Heritage' Treatment in the International Plant Genetic Resources Regime Complex' (2007) Michigan State Law Review 35, 53-55.

¹⁷⁴ The Third Session of the Governing Body of the ITPGRFA adopted a resolution on farmers' rights in Tunis on 4 June 2009. The resolution, proposed by Brazil on behalf of Africa, Latin America, and the Caribbean, encouraged contracting parties to review or adjust national legislations on farmers' rights as well as to share experiences on the implementation of farmers' rights. *Resolution on Farmers' Rights* (Third Session of the Governing Body of the ITPGRFA, Tunis, Agenda Item 14, 4 June 2009) <<http://www.farmersrights.org/pdf/ResolutionFR-GB3.pdf>> accessed 09 July 2017.

¹⁷⁵ See Chapter 5.

¹⁷⁶ See Chapter 4.

resources (users) and the parties that provide the resources (providers).¹⁷⁷ As will be seen below, access and benefit sharing under the CBD is facilitated through bilateral agreements, whereas the ITPGRFA establishes a multilateral system to facilitate access and benefit sharing.

The access and benefit sharing principle under the CBD reaffirms states' sovereign rights over their natural resources – including genetic resources.¹⁷⁸ In particular, Article 15 of the CBD sets out conditions for the grant of access to genetic resources, as well as fair and equitable distribution of benefits arising from their use. First, it provides that 'access, where granted, shall be on mutually agreed terms.'¹⁷⁹ The inclusion of the provision on 'mutually agreed terms' indicates the expectation of a negotiation between the contracting party granting the access and the party desiring to use the generic resources.¹⁸⁰ As such, access to genetic resources and the associated benefit sharing is conditional on successful bilateral negotiations between the parties. Bilateral agreements are the principal means through which parties authorise access to genetic resources and agree on benefits arising from the use of the genetic resources. Second, 'access to genetic resources shall be subject to prior informed consent of the contracting party providing such resources, *unless otherwise determined by that party*'.¹⁸¹ This provision requires informed consent of the providing party prior to the user's access of the genetic resource. Before granting authorisation for use of the genetic resource, the provider can ask the user to set out implications of access, such as by specifying who would use the genetic resources and how it would be used. This information may determine whether access is granted.¹⁸² However, the inclusion of '*unless otherwise determined by that party*' indicates that the prior informed consent

¹⁷⁷ CBD: ABS, 'Introduction to access and benefit-sharing' (Secretariat of the Convention on Biological Diversity, Canada 2011) 1, 3 <<https://www.cbd.int/abs/infokit/revised/web/all-files-en.pdf>> accessed 09 July 2017.

¹⁷⁸ CBD, arts 3 and 15.1.

¹⁷⁹ CBD, art 15.4.

¹⁸⁰ Lyle Glokwa, Francoise Burhenne-Guilmin, and Hugh Synge in collaboration with Jeffrey A McNeely and Lothar Gundling, *A Guide to the Convention on Biological Diversity* (IUCN Environmental Law Centre, Environmental Policy and Law Paper No 30, 1994) 80 (*A Guide to the Convention on Biological Diversity*).

¹⁸¹ Emphasis added. CBD, art 15.5.

¹⁸² Glokwa and others, *A Guide to the Convention on Biological Diversity* (n 180) 81.

condition is optional. In other words, a user is only required to obtain prior informed consent if the providing party requires it.

Article 15 of the CBD leaves it open for national governments to design access and benefit sharing legislation. Thus, the exact details of access and benefit sharing are open for negotiations between users and providers of the genetic resources through bilateral agreements. The CBD cautions that its legal principles do not conflict with the rights and obligations of any contracting party derived from existing international agreements, except where the exercise of those rights would cause serious damage or threat to biological diversity.¹⁸³ Consequently, it obliges member states to ensure that their IPRs systems are ‘supportive of and do not run counter to the CBD objectives.’¹⁸⁴

As the CBD leaves it open for parties to negotiate and design legal frameworks for access and benefit sharing, Global South countries generally found it challenging to implement the CBD provisions.¹⁸⁵ Susan Bragdon, Kathryn Garforth, and John Haapala explain that in the initial post-CBD period, starting from the early to the mid-1990s, Global South countries such as the Philippines and Costa Rica that attempted to design and implement national access and benefit sharing structures found that ‘it was an exceedingly complex exercise, requiring the collaboration of experts in science, law and business.’¹⁸⁶ They add that Global South countries generally lacked the required expertise to design access and benefit sharing laws, and to negotiate the relevant contracts.¹⁸⁷ Furthermore, the Global South countries lacked the ability to track the use of resources that had been sourced from their jurisdictions and to monitor whether the terms of the negotiated access and benefit sharing agreements were adhered to by the users.¹⁸⁸ To address these challenges,

¹⁸³ CBD, art 22.

¹⁸⁴ CBD, art 16.5.

¹⁸⁵ Susan Bragdon, Kathryn Garforth, and John E Haapala Jr, ‘Safeguarding Biodiversity: The Convention on Biological Diversity’ in Geoff Tansey and Tasmin Rajotte (eds), *The Future Control of Food: A Guide to International Negotiations and Rules on Intellectual Property Biodiversity and Food Security* (Earthscan 2008) 100 (‘Safeguarding Biodiversity’).

¹⁸⁶ *ibid.*

¹⁸⁷ *ibid.*

¹⁸⁸ *ibid.*

two further frameworks were adopted to facilitate the implementation of access and benefit sharing principles at the national level: the Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization in 2002 (Bonn Guidelines), and the Nagoya Protocol on Access and Benefit Sharing in 2010 (Nagoya Protocol).¹⁸⁹

The Bonn Guidelines were designed as voluntary guidelines to assist CBD parties in drafting legal, policy, or administrative frameworks on access and benefit sharing.¹⁹⁰ Significantly, the Bonn Guidelines encouraged disclosure of origin of genetic resources in applications for IPRs where the subject matter of the application concerns or makes use of genetic resources in its development.¹⁹¹ This disclosure of origin principle is currently being negotiated at WIPO, as will be discussed below. The Bonn Guidelines recommended the disclosure of origin provision as a means to track compliance with prior informed consent and mutually agreed conditions on which access to genetic resources are granted.¹⁹² However, dissatisfied with the voluntary nature of the Bonn Guidelines, Global South actors

¹⁸⁹ Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization, 16(d)(ii), 7 <<https://www.cbd.int/doc/publications/cbd-bonn-gdls-en.pdf>> accessed 09 July 2017 (Bonn Guidelines); Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity <<https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf>> accessed 09 July 2017 (Nagoya Protocol).

¹⁹⁰ Bonn Guidelines. The CBD Conference of Parties (CBD-COP) decided to establish a Panel of Experts on Access and Benefit Sharing at its 4th meeting in 1998 to clarify principles and concepts related to access and benefit sharing. The Panel of Experts met twice to discuss issues such as prior informed consent, mutually agreed terms, and benefit sharing. Two years later, at its 5th meeting in 2000, the CBD-COP established an Open-ended Working Group on Access and Benefit Sharing to develop guidelines and other approaches to assist parties with the implementation of the access and benefit sharing provisions of the CBD. Following these interventions, the Bonn Guidelines were adopted in 2002. For a detailed discussion on the Bonn Guidelines, see generally, Kent Nnadozie, Robert Lettington, Carl Bruch, Susan Bass, and Sarah King (eds), *African Perspectives on Genetic Resources: A Handbook on Laws, Policies and Institutions* (Environmental Law Institute 2003) 37-42.

¹⁹¹ CBD, 'Role of Intellectual Property Rights in the Implementation of Access and Benefit Sharing Arrangements', *Access and benefit-sharing as related to genetic resources. Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization*, COP 6 Decision VI/24, paras 1 and 2 <<https://www.cbd.int/decision/cop/default.shtml?id=7198>> accessed 15 July 2017.

¹⁹² *ibid.*

pushed for legally binding principles on access and benefit sharing.¹⁹³ This was achieved through the Nagoya Protocol.

The Nagoya Protocol transformed the access and benefit sharing principle by providing an internationally legally binding framework to promote the transparent and effective implementation of access and benefit sharing.¹⁹⁴ Put differently, the Nagoya Protocol provides detailed guidelines for both users and providers of genetic resources, which provides legal certainty when negotiating access and benefit sharing agreements. Kabir Bavikatte and Daniel Robinson point out that ‘the Nagoya Protocol is the result of an ongoing struggle to assert the rights of indigenous peoples and local communities to their natural resources, which may be described as a counter-hegemonic movement – against the neoliberal institutionalisation of biological resources.’¹⁹⁵

In addition to the CBD and its Nagoya Protocol, the ITPGRFA also provides for access and benefit sharing.¹⁹⁶ However, rather than access and benefit sharing through bilateral agreements which the CBD provides, access and benefit sharing under the ITPGRFA is through a multilateral system.¹⁹⁷ The ITPGRFA’s multilateral system creates a genetic resources commons where plant genetic resources for food and agriculture are placed in an accessible global gene pool which is freely available for the use of all ITPGRFA contracting parties for research, breeding, and training.¹⁹⁸ The multilateral system covers plant genetic resources for food and agriculture listed in Annex I of the ITPGRFA, which currently covers 64 food crops and forages.¹⁹⁹ Access to genetic resources in the global gene pool is facilitated through standard material transfer agreements

¹⁹³ Kabir Bavikatte and Daniel Robinson, ‘Towards a People’s History of the Law: Biocultural Jurisprudence and the Nagoya Protocol on Access and Benefit Sharing’ (2011) 7(1) Law, Environment and Development Journal 35, 39 and 41 (‘Towards a People’s History of the Law’).

¹⁹⁴ Nagoya Protocol.

¹⁹⁵ Bavikatte and Robinson draw the ‘counter-hegemonic movement’ from Santos and Rodriguez-Garavito. Bavikatte and Robinson, ‘Towards a People’s History of the Law’ (n 193) 40.

¹⁹⁶ ITPGRFA, arts 10-13.

¹⁹⁷ ITPGRFA, arts 10-13.

¹⁹⁸ ITPGRFA, arts 10-13.

¹⁹⁹ ITPGRFA, art 11 and Annex I.

(SMTAs),²⁰⁰ which are standard contracts with a transparent set of terms and conditions to regulate the transfer of materials under the multilateral system.²⁰¹ SMTAs also incorporate the CBD provisions of prior informed consent and mutually agreed terms.²⁰² While the ITPGRFA does not restrict access to materials in the global gene pool, contracting parties are prohibited from protecting the genetic resources as IPRs system (patents or *sui generis* systems) in the form that they are received.²⁰³

Under the ITPGRFA's multilateral system, users of genetic resources are required to share benefits derived from the use of the genetic resources through the benefit sharing mechanisms established under the treaty.²⁰⁴ These mechanisms include exchange of information, transfer of technology, capacity building, and sharing of monetary benefits from commercialisation of the materials developed.²⁰⁵ The monetary benefits are transferred to an international fund in the multilateral system which is disbursed to farmers who conserve and sustainably use plant genetic resources for food and agriculture in all countries, especially farmers in the Global South.²⁰⁶ Notably, the benefit sharing mechanism under the ITPGRFA differs from the CBD. As previously seen, monetary benefits under the ITPGRFA go back to the multilateral system and not to the providing parties directly, as is the case with the CBD. Countries that ratify the CBD, the Nagoya Protocol, and the ITPGRFA will apply the provisions of the multilateral system to those seeking access to the food crops and forages in Annex I of the ITPGRFA, and apply the CBD or the Nagoya Protocol to all other genetic resources.²⁰⁷ However, countries that have

²⁰⁰ ITPGRFA, art 12.4. On Standard Material Transfer Agreements, see generally, ITPGRFA, *Standard Material Transfer Agreement* (FAO 2009) <<http://www.fao.org/3/a-i0520e.pdf>> accessed 09 July 2017.

²⁰¹ *ibid.*

²⁰² Tasmin Rajotte, 'The Negotiations Web: Complex Connections' in Geoff Tansey and Tasmin Rajotte (eds), *The Future Control of Food: A Guide to International Negotiations and Rules on Intellectual Property, Biodiversity and Food Security* (Earthscan 2008) 151 ('The Negotiations Web').

²⁰³ ITPGRFA, art 12.3(d).

²⁰⁴ ITPGRFA, art 13.2.

²⁰⁵ ITPGRFA, art 13.2.

²⁰⁶ ITPGRFA, art 13.3.

²⁰⁷ The CBD has 196 parties: CBD, *List of Parties* <<https://www.cbd.int/information/parties.shtml>> accessed 10 July 2017. The Nagoya Protocol has 97 parties:

only ratified either the CBD (or the Nagoya Protocol) will apply the relevant provisions of these agreements as applicable.²⁰⁸ Indeed, the inclusion of access and benefit sharing provisions in both the CBD and the ITPGRFA is attributable to not only the historical links between both institutions but also to the Global South actors that lobbied for this provision.

To close this discussion, access and benefit sharing principles under the ITPGRFA and the CBD seek to recognise and reward the sources of origin of genetic resources. Prior informed consent and mutually agreed terms are two important conditions on which access and benefit sharing is granted under the CBD. Access and benefit sharing under the CBD has evolved towards clarity through the Nagoya Protocol. Similarly, access and benefit sharing under the ITPGRFA clearly sets out SMTAs to facilitate the access and benefit sharing process.

Disclosure of Origin

Closely linked to the prior informed consent condition for access and benefit sharing in the CBD discussed above is the proposed principle of disclosure of origin. The principle requires applicants for patents or *sui generis* rights to specify the provider of the genetic resource from which the new variety they seek to protect is derived.²⁰⁹ Unlike farmers' rights as well as access and benefit sharing which are governed under the ITPGRFA and the CBD, 'disclosure of origin' is not yet established under any international treaty. Global South proponents of the 'disclosure of origin' principle, such as India and Brazil, have submitted proposals

<<https://www.cbd.int/information/parties.shtml#tab=2>> accessed 10 July 2017. The ITPGRFA has 144 parties: ITPGRFA <http://www.fao.org/fileadmin/user_upload/legal/docs/033s-e.pdf> accessed 10 July 2017.

²⁰⁸ Rajotte, 'The Negotiations Web' (n 202) 152.

²⁰⁹ Leskien and Flitner, 'Intellectual Property Rights and Plant Genetic Resources' (n 91) 56; The Crucible II Group, *Seeding Solutions: Volume 2* (n 147) 158-59; Laurence Helfer, *Intellectual Property Rights in Plant Varieties, International Legal Regimes and Policy Options for National Governments* (FAO 2004) 74; Joshua Sarnoff and Carlos Correa, *Analysis of Options for Implementing Disclosure of Origin Requirements in Intellectual Property Applications* (UNCTAD/DITC/TED/2005/14, UN Publication 2006) 5-9 (*Analysis of Options for Implementing Disclosure of Origin Requirements in Intellectual Property Application*).

in support of this principle to the WTO, FAO, CBD, and WIPO.²¹⁰ However, the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge, and Folklore (Intergovernmental Committee) has become the main forum for debates and negotiations on ‘disclosure of origin.’²¹¹ A draft treaty text on disclosure of origin titled ‘Consolidated Document Relating to Intellectual Property and Genetic Resources’ is under negotiations at WIPO.²¹² While discussions about the protection of traditional knowledge in WIPO go back to the 1960s, discussions about the relationship between IPRs and genetic resources in the WIPO Intergovernmental Committee stemmed from concerns raised by the CBD Conference of the Parties (CBD-COP).²¹³ Chidi Oguamanam notes that the WIPO Intergovernmental Committee represents a forum for continued exploration of the perennial North-South tension in IPRs.²¹⁴

As with the other legal systems and principles discussed above, there are divergent views on the disclosure of origin principle. Global North countries such as the US, Canada, and Japan expressed concerns that a mandatory disclosure of origin requirement in IPRs applications would introduce uncertainties in the application process, which may lead to invalidation of IPRs or which may complicate the

²¹⁰ See generally, Sarnoff and Correa, *Analysis of Options for Implementing Disclosure of Origin Requirements in Intellectual Property Application* (n 209).

²¹¹ WIPO, Intergovernmental Committee (n 4). For a detailed review of the WIPO Intergovernmental Committee, see Daniel F Robinson, Ahmed Abdel-Latif, and Pedro Roffe (eds), *Protecting Traditional Knowledge: The WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore* (Routledge 2017) (*Protecting Traditional Knowledge*).

²¹² Second Revision of the Consolidated Document Relating to Intellectual Property and Genetic Resources (as at the close of IGC 30 on 3 June 2016)

<http://www.wipo.int/meetings/en/doc_details.jsp?doc_id=340736> accessed 14 July 2017.

²¹³ For information about the WIPO Intergovernmental Committee, see generally, Daniel F Robinson, Pedro Roffe, and Ahmed Abdel-Latif, ‘Introduction: Mapping the Evolution, State-of-Play and Future of the WIPO IGC’ in Robinson, Abdel-Latif, and Roffe (eds), *Protecting Traditional Knowledge* (n 211) 3-9; Wend Wenland, ‘The Evolution of the IGC from 2001 to 2016: An Insider’s Perspective’ in Robinson, Abdel-Latif, and Roffe (eds), *Protecting Traditional Knowledge* (n 211) 31-55; WIPO, *The WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore* (Background Brief No 2) <http://www.wipo.int/edocs/pubdocs/en/wipo_pub_tk_2.pdf> accessed 15 July 2017.

²¹⁴ Chidi Oguamanam, ‘Ramifications of the WIPO IGC for IP and Development’ in Robinson, Abdel-Latif, and Roffe (eds), *Protecting Traditional Knowledge* (n 211) 340.

benefit sharing process.²¹⁵ On the other hand, Global South countries such as India, Brazil, Nigeria, Namibia, South Africa, and the African Group in general are in support of the disclosure requirement in IPRs applications, including patents and plant variety protection systems.²¹⁶ The delegation of Nigeria, speaking on behalf of the African Group, emphasised that the African Group's objective is to enhance transparency through the establishment of minimum international standards for mandatory disclosure of the source of origin of genetic resources and associated traditional knowledge.²¹⁷ However, there are divisions about how to frame the disclosure of origin principle. The EU supports the mandatory disclosure of origin principle, which it argues should be a formal requirement for granting patents, thus deviating from the US, Canada, and Japan's position, yet it submits that the disclosure of origin requirement should be confined to patent applications and not apply to intellectual property (IP) in general.²¹⁸ The EU specifically maintains that plant variety protection is dealt with under UPOV, and should thus be excluded from the discussions at WIPO.²¹⁹

It is argued that with a *sui generis* plant variety protection system, the 'disclosure of origin' principle could contribute to compliance with the prior informed consent and mutually agreed terms set out as conditions for access and benefit sharing in

²¹⁵ WIPO, *Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore: Twenty-Ninth Session Geneva, Report Adopted by the Committee* (WIPO/GRTKF/IC/29/8, 30 May 2016) para 191, 48-49
http://www.wipo.int/meetings/en/details.jsp?meeting_id=3898 accessed 15 July 2017. See also WIPO, *Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore: Twenty-Seventh Session Geneva*, 'Joint Recommendation on Genetic Resources and Associated Traditional Knowledge: Document Submitted by the Delegations of Canada, Japan, Norway, the Republic of Korea and the United States of America' (WIPO/GRTKF/IC/27/6, 25 February 2014)
http://www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_27/wipo_grtkf_ic_27_6.pdf accessed 15 July 2017.

²¹⁶ See these countries' submissions in WIPO, *Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore: Twenty-Ninth Session Geneva, Report Adopted by the Committee* (n 215).

²¹⁷ *ibid*, para 174, 45. The delegation of Nigeria was composed of Chidi Oguamanam, Ruth Okediji, and Chichi Umesi.

²¹⁸ WIPO, *Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore: Twenty-Ninth Session Geneva, Report Adopted by the Committee* (n 215), para 177, 45-46.

²¹⁹ *ibid*.

the CBD.²²⁰ In sum, although the WIPO Intergovernmental Committee treaty negotiations have been ongoing for over a decade and a half, there is still no consensus on the ‘disclosure of origin’ principle.²²¹

3.3.2. The *Sui Generis* Option

It is important to note here that there is no ‘one-size-fits-all’ coverage of the law, conditions for protection, and scope of protection template for a *sui generis* plant variety protection system. As TRIPS does not define or set out elements of a *sui generis* system, WTO members can design national *sui generis* systems based on their distinct farming practices, seed systems, and regional or international obligations.

Coverage of the Law

TRIPS neither explicitly indicates the required coverage for a *sui generis* system nor limits the *sui generis* provisions to a specific number of species. This implies that a *sui generis* system can provide for the protection of all species and genera. Dan Leskien and Michael Flitner explain that:

...it seems clear that member states have to provide for the protection of plant varieties of all species and botanical genera. Any other interpretation of article 27.3b of TRIPS would have to indicate for how many species or for which type of species member states have to grant *sui generis* protection and there is no such provision under TRIPS.²²²

²²⁰ See preceding section. See also CBD, ‘Role of Intellectual Property Rights in the Implementation of Access and Benefit Sharing Arrangements’ (n 191) 284.

²²¹ Oguamanam, ‘Ramifications of the WIPO IGC for IP and Development’ (n 214) 341.

²²² Leskien and Flitner, ‘Intellectual Property Rights and Plant Genetic Resources’ (n 91) 28. Similarly, the Crucible Group concluded that ‘as TRIPS does not qualify species or genera, it would appear that WTO members must offer protection for plant varieties of all species and genera, or else this option may not be considered TRIPS-compliant.’

Similarly, the Crucible Group concludes that since TRIPS does not prioritise any group of species or genera, it would appear that to have a TRIPS-compliant *sui generis* system, WTO members must offer protection for plant varieties of all species and genera.²²³ Notably, a creative *sui generis* system could cover wide-ranging categories of plant varieties, including new varieties and extant varieties (varieties already existing in the public domain). As will be seen in Chapter 5, the range of extant varieties protected under India and Thailand's creative *sui generis* systems include farmers' varieties, local domestic plant varieties, general domestic plant varieties and wild plant varieties. The key point here is that choosing the *sui generis* option provides latitude for Nigeria and other Global South countries to define and protect varieties as they deem fit.

Conditions for Protection

As the conditions for protection under a *sui generis* system is also undefined in TRIPS, national legislations often take the UPOV plant breeder's rights system as a reference point.²²⁴ However, it has been seen in 3.3 above that UPOV's DUS conditions for protection are better suited to a commercial plant breeder's new varieties.²²⁵ Farmers' varieties, which are inherently unstable and assorted, are certainly unsuited to the DUS conditions.²²⁶ The consequence of having the UPOV-styled conditions for protection is that it excludes farmers' varieties from the subject matter of protection under a national plant variety protection system. Therefore, to have a *sui generis* system that covers the protection of both new plant breeder's varieties and farmers' varieties, a national plant variety protection system could have different conditions for each category of plant varieties.²²⁷

For example, the DUS conditions could apply to new plant varieties developed by breeders, private companies, and other agricultural research institutes.²²⁸ Farmers'

²²³ The Crucible II Group, *Seeding Solutions: Volume 2* (n 147) 138.

²²⁴ Rangnekar, *Access to Genetic Resources, Gene-based Inventions and Agriculture* (n 18) 37.

²²⁵ See 3.3 above.

²²⁶ Rangnekar, *Access to Genetic Resources, Gene-based Inventions and Agriculture* (n 18) 39.

²²⁷ Correa, *Plant Variety Protection in Developing Countries* (n 121) 48-49.

²²⁸ See also Correa, *Plant Variety Protection in Developing Countries* (n 121) 50.

varieties or extant varieties conserved, bred, or developed by farmers or farming communities are unlikely to meet the DUS conditions for protection.²²⁹ Thus, for farmers' varieties and extant varieties, the DUS conditions could be replaced with an 'identifiable' condition. 'Identifiability' highlights the need to identify specific attributes of varieties to be protected.²³⁰ In other words, each generation of the plant variety which is clearly different from other existing varieties can be 'identified' and protected. However, as the *sui generis* option provides flexibilities, the specific details of the 'identifiability' condition could be set out in the national laws.

Scope of Protection

As with the coverage of law and conditions for protection discussed above, the scope of protection in a *sui generis* system is also not specified under TRIPS. The scope of protection refers to the rights derived from the grant of protection. These rights determine the extent of control available to the right holder. One of the main arguments for promoting *sui generis* plant variety protection systems in the Global South as maintained in this thesis is that it allows countries to incorporate provisions suited to small-scale farming practices. Thus, in designing a *sui generis* system, these three concerns could be addressed at the national level. First, socio-economic concerns about saving, reusing, exchanging, and selling farm-saved seed of protected varieties. Recall that saving, reusing, exchanging, and selling farm-saved seed was one of the key arguments of the Global South in the FAO, which eventually culminated in its inclusion as part of farmers' rights under Article 9 of the ITPGRFA.²³¹ Second, the duration of protection for the different categories of varieties. For example, each category of variety could have different durations of protection. Third, the extent of plant variety right holders' control over protected varieties. For example, research, experimental or educational exemptions, public order or public morality exemptions, or generally, exemptions to avoid harmful effects on biodiversity, food security, or prejudice to the farming systems.

²²⁹ See also Rangnekar, *Access to Genetic Resources, Gene-based Inventions and Agriculture* (n 18) 39; Correa, *Plant Variety Protection in Developing Countries* (n 121) 50.

²³⁰ Leskien and Flitner, 'Intellectual Property Rights and Plant Genetic Resources' (n 91) 53.

²³¹ See discussion on farmers' rights in 3.3.1 above.

In addition to tailoring the coverage of the law, conditions of protection, and scope of protection of *sui generis* systems in line with national realities, Global South countries can incorporate other farmers' rights provisions under the ITPGRFA, access and benefit sharing provisions under both the CBD and the ITPGRFA, as well as any other suitable provisions.

3.3.3. Debates on Sui Generis System: Lessons for Nigeria

As shown above, choosing the *sui generis* option under TRIPS gives a country the latitude to incorporate legal principles suited to its national realities. In effect, a country can 'mix-and-match' legal systems and legal principles to produce its desired plant variety protection system. Apart from the latitude afforded, which is the key benefit of choosing a *sui generis* system, other benefits are as follows.

First, and linked with the latitude mentioned in the preceding paragraph, a country is free to creatively design a *sui generis* system that implements relevant provisions of the ITPGRFA, the CBD, and the UPOV Convention, without limitations or restrictions.

Second, with a creatively designed *sui generis* system, a country is not at risk of being in an international system that could be revised to grant breeders more extensive rights, as was the case in the UPOV 1991 Convention revision. As the UPOV Convention is a pro-breeder system, one could argue that – drawing from the rationale for its establishment and even its 1991 revision – further revisions may also be towards strengthening plant breeders' rights since this is the very ethos of the plant breeder's rights system, as the name implies. More importantly, as UPOV is controlled by the influence of Global North countries, Global South members are not in a position to effectively contribute to making decisions suited to their farming practices and seed systems. Thus, a creatively designed *sui generis* system gives countries control over the extent of revisions to their national laws.

Third, a creatively designed *sui generis* system which covers protection of different categories of plant varieties – such as new breeder’s varieties and farmers’ varieties – provides a wider range of varieties in the seed market. This is useful for farmers because empirical evidence from the US shows that commercial plant breeders tend to invest in only a few crops.²³² For instance, where commercial plant breeders improve only a few crops, and plant variety protection systems as well as seed laws allow formal commercialisation of only varieties that meet the DUS conditions, there would only be a limited choice of varieties to formally purchase in the seed markets. However, a wider range of protected varieties under a *sui generis* plant variety protection system offers farmers more choice.

Nonetheless, there are concerns about choosing the *sui generis* option. First, on the other side of the debate that a *sui generis* system offers latitude and choice, is the concern about the actual process of designing a *sui generis* system. TRIPS does not set out provisions of a *sui generis* plant variety protection system and there is no international *sui generis* treaty for protecting plant varieties apart from UPOV. Therefore, Global South countries seeking to embark on designing *sui generis* systems have to creatively pull together suitable provisions, including definitions and legal principles, to formulate coherent plant variety protection systems. As this process involves both extensive expertise and resources, the flexibility allowed in the *sui generis* option could at the same time be problematic. For example, from the above examination of farmers’ rights alongside access and benefit sharing, the open-ended nature of farmers’ rights under the ITPGRFA as well as the tangled and overlapping provisions on access and benefit sharing in the CBD and the ITPGRFA was seen. The ambiguity in these legal principles – that is, the legal principles being open to more than one interpretation – further exacerbates the process of designing a *sui generis* system. Another concern in the design process

²³² Economic analysis of Keith Fuglie and others show that 81 per cent of the total certificates granted in the US from 1971 to 1994 were issued for four crops – soya beans, corn, wheat, and cotton varieties. Keith Fuglie, Nicole Ballenger, Kelly Day Rubenstein, Cassandra Klotz, Michael Ollinger, John Reilly, Utpal Vasavada and Jet Yee, ‘Agricultural Research and Development: Public and Private Investments under Alternative Markets and Institutions’ (Agricultural Economic Report No AER-735, May 1996) 38. See also Biswajit Dhar, *Sui Generis Systems for Plant Variety Protection: Options under TRIPS, A Discussion Paper* (Quaker United Nations Office 2002) 23.

is the importance of careful attention to choosing the three frames in the analysis above – coverage of the law, conditions of protection, and scope of protection under a *sui generis* system.

Closely linked to the first concern is the second concern on technical support to creatively design a *sui generis* plant variety protection system. One benefit Global South countries that join the UPOV have is the technical support from the UPOV office.²³³ However, Global South countries that opt for the *sui generis* system do not have the same access to support, because there is no international body similar to the UPOV office that is responsible for overseeing a creatively designed *sui generis* system. Notwithstanding, Global South countries seeking to design creative *sui generis* systems benefit from guidelines such as the African Model Law or precedents from other countries that have designed creative *sui generis* systems, such as India and Thailand.

Third, while one can easily refer to the UPOV plant breeder's rights system as a type of *sui generis* system for protecting plant varieties, it is difficult to explain what a 'creatively designed' *sui generis* system suited to the Global South entails. In other words, since there is no standard international 'creatively designed' *sui generis* system, such systems vary at the national level. The complex and esoteric issues concerning plant variety protection makes it more challenging to design *sui generis* systems that cater to competing interests at the national level. A combination of the first and second drawbacks of creatively designing a *sui generis* system above, along with the lack of clarity or template, shows that it may be easier to go the UPOV way. While the UPOV plant breeder's rights system may appear to be the easier option, it is argued that though more challenging to design, the *sui generis* option gives room to carefully design a system tailored to suit a country's realities and aspirations.

So far, 3.1, 3.2, and 3.3 above have examined the patent system, the UPOV plant breeder's rights system, and creative *sui generis* system, which are all ways through which a WTO member can fulfil its obligation to protect plant varieties

²³³ Dutfield, *Food, Biological Diversity and Intellectual Property* (n 115) 9.

under TRIPS. The last plant variety protection option under TRIPS – which provides that WTO members can protect plant varieties by any combination of systems – is briefly addressed next.²³⁴

3.4. Combination of Systems

A combination of patents and a *sui generis* system could be (i) patents and a UPOV plant breeder's rights system, or (ii) patents and a creative *sui generis* system. The benefits and drawbacks teased out for each of the systems would also be applicable in a combination of systems. More importantly, a combination of systems would result in an even more extensive IPRs system for plant varieties. For example, in the US, one can protect plant varieties under the Plant Patent Act 1930 (PPA), the PVPA, or patent systems. The combination of these systems expands IPRs for plant varieties, further strengthening seed companies' control over the protected varieties.²³⁵ Geoff Tansey rightly points out that the combination of patents and any of the *sui generis* options is 'of the most advantage to industrialised countries with active seed breeding and biotechnology industries.'²³⁶

Before concluding this chapter, it is important to draw attention to the provision on the mandated review of Article 27.3(b) of TRIPS. Discussions on the mandated review cemented the Global South position on plant variety protection as seen below.

Pending Review of Article 27.3(b) of TRIPS

Following the delicate consensus on plant variety protection in TRIPS which informed the latitude in Article 27.3(b) of TRIPS as explored above, the negotiators

²³⁴ Article 27.3(b) of TRIPS obliges all WTO members to provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof.

²³⁵ See generally, Keith Aoki, *Seed Wars: Controversies and Cases on Plant Genetic Resources and Intellectual Property* (Carolina Academic Press 2008) 27-60.

²³⁶ Geoff Tansey, *Trade, Intellectual Property, Food and Biodiversity: Key Issues and Options for the 1999 Review of Article 27.3(b) of the TRIPS Agreement – A Discussion Paper* (Quaker Peace & Service London in association with Quaker United Nations Office 1999) 11.

agreed that the provision would be subject to an early review. Indeed, the last paragraph of Article 27.3(b) of TRIPS states that ‘the provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement.’²³⁷ During the TRIPS Council meeting in April 1999, there were semantic arguments about ‘review’.²³⁸ The Global South WTO members called for a review of the provisions in Article 27.3(b), arguing that ‘review’ opened up the possibility for amending the provision itself,²³⁹ while the Global North argued that the ‘review’ envisaged in the proviso in Article 27.3(b) was not a substantive review of the provision itself, but simply a review of the implementation of the provision at the national levels.²⁴⁰ Following the arguments about the term ‘review’, the mandated review which was scheduled for 1999 failed to take place.²⁴¹

Notwithstanding, the pending review has raised vibrant discussions about plant variety protection at the TRIPS Council. Specifically, the WTO Ministerial Conference at Doha in November 2001 addressed the mandated review of Article 27.3(b) of TRIPS.²⁴² The Doha Ministerial Declaration instructed the TRIPS Council to examine *inter alia*, (i) the relationship between TRIPS and the CBD,

²³⁷ TRIPS, art 27.3(b).

²³⁸ International Centre for Trade and Sustainable Development, *UNCTAD-ICTSD Project on IPRs and Sustainable Development: Resource Book on TRIPS and Development* (Cambridge University Press 2005) 395 (*UNCTAD-ICTSD Project on IPRs and Sustainable Development*).

²³⁹ The Crucible II Group, *Seeding Solutions: Volume 1* (n 52) 100; International Centre for Trade and Sustainable Development, *UNCTAD-ICTSD Project on IPRs and Sustainable Development* (n 238) 395.

²⁴⁰ *ibid.*

²⁴¹ For discussions on the mandated TRIPS review, see generally, International Centre for Trade and Sustainable Development, *UNCTAD-ICTSD Project on IPRs and Sustainable Development* (n 238) 395-97; The Crucible II Group, *Seeding Solutions: Volume 1* (n 52) 100-02; Watal, *Intellectual Property Rights in the WTO and Developing Countries* (n 6) 180-82; WTO, ‘TRIPS: Reviews, Article 27.3(b) and Related Issues: Background and the Current Situation’ <https://www.wto.org/english/tratop_e/trips_e/art27_3b_background_e.htm> accessed 26 July 2017; WTO, ‘TRIPS Issues: Article 27.3b, Traditional Knowledge, Biodiversity’ <https://www.wto.org/english/tratop_e/trips_e/art27_3b_e.htm> accessed 26 July 2017 (‘TRIPS Issues’). The WTO Doha Ministerial Conference in November 2001 instructed the TRIPS Council to examine the relationship between TRIPS and the CBD. WTO, *Ministerial Declaration, adopted on 14 November 2001* (Ministerial Conference, 4th Session Doha on 9-14 November 2001, 20 November 2001) WT/MIN(01)/DEC/1, para 19 <https://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.pdf> accessed 26 July 2017 (Doha Ministerial Declaration).

²⁴² WTO, Doha Ministerial Declaration, para 19.

(ii) the protection of traditional knowledge and folklore, and (iii) other relevant issues raised by WTO members regarding the review and implementation of Article 27.3(b).²⁴³ The 2001 Doha Declaration charted the course for more nuanced debates about the review of Article 27.3(b), as well as the relationship between TRIPS, the UPOV 1991 Convention, the CBD, and the ITPGRFA. Notably, the US maintains its preference for a patent system for all plant inventions, including plant varieties.²⁴⁴ The US and the EU, along with other Global North WTO members, propose that Article 27.3(b) of TRIPS be revised to mention the UPOV plant breeder's rights as the only *sui generis* plant variety protection option under TRIPS.²⁴⁵ Conversely, the Global South WTO members oppose both patents for plant varieties and the UPOV plant breeder's rights system.²⁴⁶

The African Group's submission to the TRIPS Council of June 2003 exemplifies the Global South's arguments on the review of Article 27.3(b), alongside the connections between TRIPS, the CBD, and the ITPGRFA.²⁴⁷ To start with, the African Group proposed that Article 27.3(b) of TRIPS be amended to prohibit patents on life forms. Furthermore, it proposed that the TRIPS Council provide a clear confirmation that WTO members are free to design creative *sui generis* systems which norm-borrow from the CBD and the ITPGRFA.²⁴⁸ As such, the African Group, along with other Global South WTO members such as India and Thailand, propose a revision of Article 27.3(b) of TRIPS to harmonise it with farmers' rights as well as access and benefit sharing principles.²⁴⁹ Although the review of Article 27.3(b) of TRIPS is still pending, it is clear that Global South WTO members maintain the common position that a creatively designed *sui*

²⁴³ *ibid.* For documents on the review of Article 27.3(b) of TRIPS and the relationship between TRIPS and the CBD, see WTO, 'TRIPS Issues' (n 241).

²⁴⁴ See for example, WTO, 'Communications from the United States' (Preparations for the 1999 Ministerial Conference, 19 November 1998) WT/GC/W/115.

²⁴⁵ See for example, WTO, 'Communication from the European Communities and their Member States' (A Concept Paper on the Review of Article 27.3b of TRIPS, 17 October 2002) IP/C/W/383.

²⁴⁶ WTO, 'Taking Forward the Review of Article 27.3(b) of the TRIPS Agreement' (n 29).

²⁴⁷ *ibid.*

²⁴⁸ *ibid.*, 2-3.

²⁴⁹ For documents on the review of Article 27.3(b) of TRIPS and the relationship between TRIPS and the CBD, see generally, WTO, 'TRIPS Issues' (n 241).

generis system is best suited for the small-scale centred farming prevalent in the Global South.

3.5. Conclusion

This chapter has examined the different plant variety protection options under Article 27.3(b) of TRIPS. The adoption of the TWAIL lens in the form of small-scale farmers' interests provides insights into the benefits and drawbacks of each system for Nigeria. Specifically, the TWAIL analysis revealed that a creatively designed *sui generis* plant variety protection system is the best suited option for Nigeria under TRIPS. This is because the *sui generis* option provides the latitude to incorporate provisions that balances the interests of small-scale farmers and private seed companies (commercial plant breeders) who both contribute to the seed sector in Nigeria. The creative *sui generis* system could pull together provisions from the CBD, the ITPGRFA, and the UPOV Convention.

The regime complex theory illuminates the partially overlapping and interrelated legal systems and principles covering plant varieties as examined in this chapter. The systems and principles examined are the patent system, the UPOV plant breeders' system, and the creative *sui generis* system, alongside farmers' rights, access and benefit sharing, and disclosure of origin principles. These systems and principles are all set out in different treaties, namely TRIPS, UPOV, the ITPGRFA, the CBD, and the WIPO Genetic Resources treaty currently undergoing negotiations. Significantly, this chapter has shown that while the obligation to protect plant varieties arises from Article 27.3(b) of TRIPS, the implementation of this obligation at the national level requires detailed understanding of the breadth of each option, as well as the connection of each option with other relevant treaties.

Notably, this chapter contributes to answering the first central research question the thesis poses, which concerns the type of plant variety protection system best suited to Nigeria. The conclusion in this chapter that a creative *sui generis* system is best suited to Nigeria also aligns with the Global South position at the TRIPS

Council, as seen in 3.3 above. However, although the Global South WTO members have a common preference for a creative *sui generis* system, there are variations in translating this preference into domestic legal architecture. That is, there is a difference between the Global South WTO members' rhetoric at the TRIPS Council and their actions at the national level.

The subsequent Chapters – 4 and 5 – attempt to explain the rationale for this difference between Global South WTO members' rhetoric and actions. Chapter 4 analyses the proliferation of the UPOV 1991 Convention plant breeder's rights system within Africa – which clearly differs from the African Group and Global South's common position at the TRIPS Council, while Chapter 5 analyses the design and introduction of creative *sui generis* plant variety protection systems by India and Thailand, which align with the Global South's common position at the TRIPS Council. In doing so, Chapters 4 and 5 answer the subsidiary research question. By and large, the analysis in Chapters 4 and 5 provide useful lessons for Nigeria because the findings therein provide insights to Nigeria's current plant variety protection *status quo*, as well as to how Nigeria can design and introduce the creative *sui generis* system suited to it.

Chapter 4

Africa's Journey to UPOV: African Model Law, Not Fit for Purpose?

The preceding chapter examined the plant variety protection options under Article 27.3(b) of TRIPS. It concluded that the *sui generis* option is best suited to Nigeria because it provides the latitude to protect the interests of both small-scale farmers and private seed companies (commercial plant breeders). That conclusion aligns with the African Group's position at the TRIPS Council. The African Group rejected the patent system and the UPOV 1991 Convention's plant breeder's rights system because they were considered unsuitable for the small-scale centred farming practices prevalent in Africa. Yet, there is a proliferation of the UPOV 1991 Convention in Africa. This chapter, which focuses on the proliferation of the UPOV plant breeder's rights systems in Africa, contributes to answering the subsidiary research question. Findings from this chapter are important for analysis on the Nigerian case study for the two reasons below.

First, Nigeria and the other African countries favoured the *sui generis* option under TRIPS, and articulated this position at the TRIPS Council. Understanding why some African countries have adopted the UPOV plant breeder's rights system which diverges from the African position provides lessons for Nigeria, as it is yet to fulfil its TRIPS obligation to protect plant varieties. Second, the African Group did not merely assert preference for the *sui generis* option at the TRIPS Council, but actually translated its rhetoric into comprehensive *sui generis* plant variety protection guidelines, embodied in the Organisation of African Unity's Model Law for the Protection of the Rights of Local Communities, Farmers, and Breeders, and for the Regulation of Access to Biological Resources (African Model Law).¹ In other words, the African Group demonstrated a clear understanding of the plant variety protection discourse at the global level, and prepared an effective counter-narrative in response to the dominant patent and plant breeder's rights narratives

¹ Organisation of African Unity's Model Law for the Protection of the Rights of Local Communities, Farmers and Breeders and for the Regulation of Access to Biological Resources (2000) <<http://www.wipo.int/edocs/lexdocs/laws/en/oau/oau001en.pdf>> accessed 28 July 2017 (African Model Law).

of the United States (US) and Europe. Understanding why some African countries have adopted UPOV plant breeder's rights systems despite the existence of this African Model Law also provides invaluable lessons for Nigeria.

Drawing from TWAIL insights on the implementation of international law to suit Third World interests and the regime complex theory insights on actors' strategies in law-making where there are overlapping treaties covering one subject matter, the chapter finds that four interrelated factors contribute to the proliferation of the UPOV plant breeder's rights system in Africa. These are (i) trade and investment agreements, (ii) regional associations, (iii) pressure from seed companies, and (iv) UPOV office lobbies. Within Africa, UPOV currently has six members, i.e. five countries and one regional organisation: Kenya, Tanzania, Tunisia, Morocco, South Africa, and the African Intellectual Property Organisation (OAPI). Four of the five countries have trade agreements and economic partnership agreements that require them to join UPOV. Only Kenya does not. It was the private sector seed companies that pressured Kenya to join UPOV.

Apart from OAPI, two other regional organisations – the African Regional Intellectual Property Organisation (ARIPO) and the Southern African Development Community (SADC) – have initiated the process of acceding to the UPOV 1991 Convention. In particular, regional organisations are a key way-in to Africa for UPOV because 44 of the 54 African countries belong to OAPI, ARIPO, and SADC. As such, if ARIPO and SADC become UPOV members, about 80 per cent of African countries would become party to UPOV. The four above-mentioned factors that contribute to UPOV's proliferation in Africa, combined with the factors that contribute to the design of creative *sui generis* systems in the Global South which is explored in Chapter 5, provide the analytical frame for the further analysis of the Nigerian case study in Chapter 6.

The chapter is divided into three parts. Part I explores the background and rationale for the African Model Law. This tells the story of how the African Model Law was developed and why it is suited to small-scale centred farming practices in Africa.

Part II traces avenues through which African countries are pressured to adopt the plant breeder's rights system under the UPOV 1991 Convention. Part III examines UPOV membership at the national level within Africa, focusing mainly on Kenya. The Kenyan example is puzzling because it acceded to the UPOV 1991 Convention despite its position as a leading interlocutor on behalf of the African Group at the TRIPS Council and its participation in the development of the African Model Law.² This puts TWAIL into perspective, as TWAIL scholars such as Antony Anghie and Bhupinder Chimni argue that Global South countries 'often act in ways that are against the interests of their peoples.'³ In other words, the implementation of international law in the Global South may disadvantage Global South peoples. One would expect that with Kenya's position as a leading interlocutor for the African Group and its participation in the development of the African Model Law, its national plant variety protection legislation would reflect the African position. But as will be seen in Part III below, this is far from the case.

4.1. The African Model Law

To start with, agriculture is an important sector in Africa. Some of the key crops grown across Africa include cassava, cashews, cocoa, coffee, cotton, maize, millet, palm produce, peanuts, rice, rubber and sorghum. Africa also has abundant natural resources, including more than half of the world's uncultivated land mass and untapped water resources.⁴ In 2016, agriculture contributed over 17 per cent to the Gross Domestic Product (GDP) in sub-Saharan Africa.⁵ As seen in Chapter 2, agriculture contributed over 20 per cent to the GDP of Nigeria in 2016.⁶ Similarly,

² See for example, WTO, 'Communication from Kenya on Behalf of the African Group, Review of Provisions of Article 27.3(b)' (8 November 1999) IP/C/W/163. As will be seen below, the second meeting of the Organisation of African Unity's Scientific, Technical and Research Commission (OAU/STRC) was convened in conjunction with the Kenyan Industrial Property Institute (KIPI).

³ Antony Anghie and B S Chimni, 'Third World Approaches to International Law and Individual Responsibility in Internal Conflicts' (2003) *Chinese Journal of International Law* 77, 78.

⁴ The World Bank, *Growing Africa: Unlocking the Potential for Agribusiness* (AFTP/AFTAI, The World Bank, January 2013) 16-17
<<http://siteresources.worldbank.org/INTAFRICA/Resources/africa-agribusiness-report-2013.pdf>> accessed 28 July 2017.

⁵ The World Bank, 'Agriculture, Value Added (% of GDP): Sub-Saharan Africa'
<<https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=ZG>> accessed 28 July 2017.

⁶ See chapter 2.

agriculture contributed 37.23 per cent to Ethiopia's GDP, 35.60 per cent to Kenya's GDP, and 41.28 per cent to Togo's GDP in 2016.⁷ The 2016 statistics mirror agriculture's historic contribution to the GDP of African countries. Indeed, in the 1980s to the 1990s, agriculture contributed over 20 per cent to the overall GDP in Sub-Saharan Africa.⁸ The importance of the agriculture sector in Africa is further reinforced by the fact that small-scale farmers and farming communities residing in rural areas depend on the sector for their livelihood.⁹

In essence, agriculture is a direct source of food and cash crops for African countries, a significant contributor to African countries' economic performance, as well as a major source of employment on the continent. Considering the importance of agriculture on the continent, the Organisation of African Unity (now African Union (AU)) designed the African Model Law. The African Model Law sets out guidelines for African countries seeking to fulfil international obligations under TRIPS, the CBD, and the ITPGRFA, while protecting the interests of small-scale farmers and farming communities, as discussed below.

4.1.1. Background on the African Model Law

The African Model Law was designed in response to the extension of intellectual property rights (IPRs) to plant varieties at the international and global levels.¹⁰ Discussions about an African Law commenced in the early 1990s, shortly after the

⁷ The World Bank, 'Agriculture, Value Added (% of GDP): Sub-Saharan Africa' (n 5).

⁸ *ibid.*

⁹ New Partnership for Africa's Development, *Agriculture in Africa: Transformation and Outlook* (NEPAD, November 2013) 25

<<http://www.un.org/en/africa/osaa/pdf/pubs/2013africanagricultures.pdf>> accessed 28 July 2017. See also Racheal Wynberg, 'Privatising the Means for Survival: The Commercialisation of Africa's Biodiversity' (Biowatch, South Africa, with contributions from GAIA/GRAIN, Issue No 5, April 2000) <<https://www.grain.org/es/article/entries/33-privatising-the-means-for-survival-the-commercialisation-of-africa-s-biodiversity?print=true>> accessed 28 July 2017; United Nations Conference on Trade and Development, *The Role of Smallholder Farmers in Sustainable Commodities Production and Trade* (UNCTAD Secretariat, TD/B/62/9, 30 July 2015) <http://unctad.org/meetings/en/SessionalDocuments/tdb62d9_en.pdf> accessed 28 July 2017.

¹⁰ Johnson Ekpere, 'African Model Law on the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources' in Kent Nnadozie, Robert Lettington, Carl Bruch, Susan Bass, and Sarah King (eds), *African Perspectives on Genetic Resources: A Handbook on Laws, Policies and Institutions* (Environmental Law Institute, 2003) 275 ('African Model Law').

CBD was adopted in 1992 and the UPOV Convention was revised in 1991.¹¹ During this period, the TRIPS and the ITPGRFA negotiations were also ongoing.¹² Drafters of the African Model Law sought to reconcile conflicting international obligations to provide a basis for discussions or further negotiations, and to facilitate compliance by the AU member states.¹³ The African Model Law achieved these objectives through a comprehensive *sui generis* system that pulled together relevant provisions from the different international treaties that were suited to African countries.¹⁴ However, the African Model Law is neither restrictive nor rigid. It simply provides flexible *sui generis* plant variety protection guidelines for AU member states.¹⁵

African countries and the African Group participated in the TRIPS, the CBD, and the ITPGRFA negotiations.¹⁶ As such, there was an awareness of the implications of plant variety protection within Africa. Johnson Ekpere, the former Secretary General of the Organisation of African Unity's Scientific, Technical and Research Commission (OAU/STRC), explains that the OAU/STRC was the primary regional institution involved in discussions about plant variety protection, especially access and benefit sharing issues.¹⁷ Farmers' and traditional healers' associations, with support from national and international civil society organisations (CSOs), raised concerns about the protection and ownership of traditional medicinal plants at the 5th OAU/STRC Meeting of Experts and Symposium on Traditional African Medicines and Medicinal Plants hosted in Kampala, Uganda in 1996.¹⁸ Following the adoption of the CBD in 1992 which

¹¹ *ibid.*

¹² *ibid.*

¹³ *ibid.*

¹⁴ *ibid.*

¹⁵ Johnson Ekpere, 'The OAU's Model Law: The Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources' (OAU/STRC 2000) 1 ('The OAU's Model Law').

¹⁶ See Chapters 1 and 3.

¹⁷ Johnson Ekpere was the Secretary of the OAU/STRC during the development of the African Model Law. Ekpere, 'African Model Law' (n 10) 276.

¹⁸ The 5th OAU/STRC Meeting was the first time that discussions about genetic resources were considered by policy-makers at the African level. Ekpere, 'African Model Law' (n 10) 276; Johnson Ekpere, 'Sui Generis Legislation and Protection of Community Rights in Africa' in Sophia Twarog and Promila Kapoor (eds), *Protecting and Promoting Traditional Knowledge: Systems, National*

stimulated debates about access to biological resources in the Global South, these farmers' and traditional healers' associations questioned the uncompensated export of indigenous biodiversity from Africa.¹⁹ In particular, the CSOs had sensitised the farmers' and traditional healers' associations about the inequities in IPRs systems, especially the use of African traditional knowledge and medicinal plants to develop protected medicinal products or processes in the pharmaceutical sector.²⁰ Although the 1996 OAU/STRC meeting focused on medicinal plants, it was the first time that African policy-makers discussed ownership and control of biological resources.²¹ The 1996 OAU/STRC meeting concluded that the STRC would coordinate the drafting of a model law on the protection of traditional knowledge and medicinal plants.²²

The OAU/STRC held a subsequent meeting in 1997 to further discuss access to medicinal plants, the protection of traditional knowledge, and IPRs. The 1997 OAU/STRC meeting, held in Nairobi, Kenya and convened in conjunction with the Kenyan Industrial Property Institute (KIPI), recommended that the STRC:

- (i) initiate and coordinate the process of drafting of a model law to regulate and protect indigenous knowledge regarding medicinal plants;
- (ii) establish a working group of experts to explore means to coordinate and harmonise national policies for medicinal plants and to craft a common policy for sustainable use of the plants;
- (iii) assist AU members to develop appropriate legislation to govern ownership, access, use, and conservation of medicinal plants; and

Experiences and International Dimensions (UNCTAD/DITC/TED/10, United Nations Conference on Trade and Development 2004) 236.

¹⁹ Noah Zerbe, 'Biodiversity, Ownership, and Indigenous Knowledge: Exploring Legal Frameworks for Community, Farmers, and Intellectual Property Rights in Africa' (2005) 53 *Ecological Economics* 493, 495-96 ('Biodiversity, Ownership and Indigenous Knowledge'); Noah Zerbe, 'Contesting Privatization: NGOs and Farmers Rights in the African Model Law' (2007) 7(1) *Global Environmental Politics* 97, 109 ('Contesting Privatization').

²⁰ Zerbe, 'Contesting Privatization' (n 19) 109.

²¹ *ibid.*

²² Zerbe, 'Biodiversity, Ownership, and Indigenous Knowledge' (n 19) 495.

- (iv) encourage AU member states to study the implication of TRIPS on pharmaceutical production, protection of medicinal plants, and traditional knowledge.²³

One of the key issues raised during the 1996 and 1997 OAU/STRC meetings was the contradiction between the CBD and TRIPS. The CBD recognises the collective sovereign right of states and local communities over biological resources, while TRIPS confers individual IPRs. For Africans, communities are custodians of biological resources and related knowledge systems. These resources and traditional knowledge are held in trust by the present generation for use of both present and future generations.²⁴ Ekpere notes that ‘biological diversity and related knowledge systems have sustained African societies since long before the advent of science.’²⁵ Thus, the CBD’s focus on national sovereignty and community rights aligns with the African and Global South communal culture, while the TRIPS or UPOV private rights monopolies reflect the Global North’s individualistic orientations.²⁶

Tewolde Egziabher explains that in general, plant and medicinal innovations in Africa results from the totality of the discoveries and inventions of members of communities.²⁷ Consequently, the inventor or discoverer does not personalise the achievement. In fact, the innovation or discovery is further improved by contributions from its users. These innovations are often free for anyone to use. In certain instances, some communities had specialised knowledge for treating the sick through medicinal plants or ‘magic.’²⁸ It is only these special knowledge

²³ Ekpere, ‘African Model Law’ (n 10) 276.

²⁴ *ibid* 277.

²⁵ *ibid*.

²⁶ *ibid*.

²⁷ Tewolde Berhan Gebre Egziabher, ‘The Convention on Biological Diversity, Intellectual Property Rights and the Interests of the South’ in Vandana Shiva (ed), *Biodiversity Conservation: Whose Resources? Whose Knowledge?* (Indian National Trust for Art and Cultural Heritage 1994) 198 (‘The Convention on Biological Diversity, Intellectual Property Rights and the Interests of the South’). For discussions on community resources and IPRs, see generally, Johanna Gibson, *Community Resources: Intellectual Property, International Trade and Protection of Traditional Knowledge* (Ashgate 2005).

²⁸ Egziabher, ‘The Convention on Biological Diversity, Intellectual Property Rights and the Interests of the South’ (n 27).

systems that are protected and inaccessible to the other members of the community. Access to the special knowledge is usually through apprenticeship.²⁹ Nonetheless, no systemic oral or written record is kept of the innovations, use of the innovations, or peoples involved in developing the innovations. In line with the communal culture prevalent in Africa, plant variety protection was uncommon in African countries prior to TRIPS. However, membership of the WTO drew them into obligations to protect plant varieties. As such, the thorny issue – or conundrum – for the OAU/STRC was how to design a suitable guideline to secure the rights of local communities, especially those of farmers and traditional healers, over their biological resources along with their associated traditional knowledge.³⁰

In response to the discussions and recommendations from the 1996 and 1997 OAU/STRC meetings mentioned above, the STRC convened a working group of experts to deliberate on the issues and to draft appropriate documents. Two factors contributed to the STRC working group's eventual outcome. First, the STRC found that the Ethiopian Environmental Protection Authority (EEPA) and the Institute of Biodiversity Conservation and Research (IBCR) were in the process of developing a community rights system for Ethiopia.³¹ Thus, the STRC partnered with the Ethiopian institutions, which expanded the scope of the STRC working group beyond medicinal plants to include all plant genetic resources.³² With this collaboration, the STRC had strong support from the Ethiopian government. In particular, Egziabher, an Ethiopian activist, academic, and General Manager of the EEPA, worked closely with Ekpere from the STRC.³³ Second, there were growing global campaigns on IPRs, farmers' rights, as well as access and benefit sharing

²⁹ *ibid.*

³⁰ Ekpere, 'African Model Law' (n 10) 278.

³¹ Zerbe, 'Biodiversity, Ownership, and Indigenous Knowledge' (n 19) 496.

³² *ibid.*

³³ Tewolde Egziabher was also actively involved in the CBD and the ITPGRFA negotiations. He was the chief negotiator for the African Group at the ITPGRFA. Tewolde Berhan Gerbe Egziabher, Elizabeth Matos, and Godfrey Mwila, 'The African Group: Creating Fair Play Between North and South' in Christine Frison, Francisco Lopez and Jose T Esquinas-Alcazar (eds), *Plant Genetic Resources and Food Security: Stakeholder Perspectives on the International Treaty on Plant Genetic Resources for Food and Agriculture* (Earthscan 2011) 44 ('The African Group'); Zerbe, 'Contesting Privatization' (n 19) 109

principles.³⁴ International CSOs such as the Third World Network (TWN), Genetic Resources Action International Network (GRAIN), the Gaia Foundation, and Rural Foundation Advancement International (RAFI) supported the STRC initiatives to develop documents that addressed the implementation of the CBD and TRIPS in Africa.

With support from the African governments and international CSOs mentioned above, the STRC working group developed three draft documents by 1998:³⁵ (i) a Model Legislation on Community Rights and Access to Biological Resources based on the Ethiopian System of Community Rights and Access;³⁶ (ii) a Declaration on Community Rights and Access to Biological Resources;³⁷ and (iii) a draft Convention for the Protection, Conservation, and Sustainable Use of African Biological Diversity, Genetic Resources, and Related Knowledge.³⁸ The topics of each document reveals the range of issues covered. In general, the documents addressed conservation and protection of medicinal plants alongside plant genetic resources, farmers' rights, and community rights. As the three documents were closely linked, they were combined into one draft law: the African Model Law.

This draft African Model Law, sponsored by the Ethiopian government, was presented at the 34th AU Summit of Heads of State and Government in Ouagadougou, Burkina Faso from 8 to 10 June 1998. At the meeting, the AU state representatives adopted the draft African Model Law as presented.³⁹ However, the Summit called for member states to initiate consultative meetings at the regional, sub-national, and national levels to further expand and clarify the Model Law to

³⁴ Zerbe, 'Biodiversity, Ownership, and Indigenous Knowledge' (n 19) 496.

³⁵ Ekpere, 'African Model Law' (n 10) 276; Zerbe, 'Biodiversity, Ownership, and Indigenous Knowledge' (n 19) 496-97.

³⁶ Ekpere, 'African Model Law' (n 10) 276.

³⁷ *ibid.*

³⁸ *ibid.*

³⁹ *ibid.* 267-77; Organisation of African Unity, Assembly of Heads of State and Government, 'Declaration and Decisions Adopted by the Thirty-Fourth Ordinary Session of the Assembly of Heads of State and Government' <https://www.au.int/web/sites/default/files/decisions/9543-1998_ahg_dec_124-131_xxxiv_e.pdf> accessed 29 July 2017 ('Declaration and Decisions Adopted by the Thirty-Fourth Ordinary Session of the Assembly of Heads of State and Government').

comply with obligations in the CBD, the ITPGRFA, and TRIPS.⁴⁰ For example, the Model Law did not provide for the protection of plant breeder's rights, which was one of the provisions the working group subsequently developed.⁴¹ The Summit further encouraged the AU states to develop an African 'Common Position' to safeguard the interests of AU member states in international forums.⁴² The Common African Position centred on three elements. First, opposition to patents on life forms, including plant varieties. Egziabher explains that Africa banned patents for life forms to 'keep its farming communities free to make their own decisions about food production, influenced of course, by their own governments.'⁴³ Put differently, the ban on patents was to protect farmers from direct control by private seed companies.⁴⁴ Second, harmonisation of TRIPS, the CBD, and the FAO International Undertaking on Plant Genetic Resources. Third, the establishment of a system to protect traditional knowledge and benefit sharing. The Common African Position sought to focus on the actual needs of the African farmers, farming communities, and traditional healers rather than imposing Global North legal systems embodied in patents and UPOV plant breeder's rights systems.

Following the recommendations of the OAU Heads of State and Government at the Summit in 1998, further workshops to expand and develop the African Model Law were held around Africa in 1999 and 2000. For example, experts from eastern and southern Africa held a regional workshop in Lusaka, Zambia in June 1999 to discuss the African Model Law's compatibility with the CBD, TRIPS, and the

⁴⁰ Zerbe, 'Biodiversity, Ownership, and Indigenous Knowledge' (n 19) 497.

⁴¹ Peter Munyi, Marcelin Tonye Mahop, Pierre du Plessis, Johnson Ekpere, and Kabir Bavikatte, *A Gap Analysis Report on the African Model Law on The Protection of the Rights of Local Communities, Farmers, Breeders, and for the Regulation of Access to Biological Resources* (Commissioned by the Department of Human Resources, Science and Technology of the African Union Commission, February 2012) 10 (*A Gap Analysis Report on the African Model Law*).

⁴² Organisation of African Unity, 'Declaration and Decisions Adopted by the Thirty-Fourth Ordinary Session of the Assembly of Heads of State and Government' (n 39).

⁴³ Tewolde Berhan Gebre Egziabher, 'The African Model Law for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources in Relation to International Law and Institutions' (Paper from Ethio-Forum 2002 Conference, 14 February 2002) <<http://chora.virtualave.net/tewolde-rights.htm>> accessed 28 July 2017 ('The African Model Law for the Protection of the Rights of Local Communities').

⁴⁴ *ibid.*

International Undertaking of the FAO.⁴⁵ Furthermore, the structure of the African Model Law was reorganised, while farmers' rights, breeder's rights, and benefit sharing provisions were developed at an AU regional workshop in Algiers, Algeria in June 2000.⁴⁶ This workshop in Algeria produced the final version of the African Model Law.⁴⁷

4.1.2. Unpacking the African Model Law

Coverage of the Law

The African Model Law protects three types of varieties: community varieties, farmers' varieties, and new breeders' varieties.⁴⁸ These are discussed in turn. Community varieties are varieties conserved and developed by local communities. Local communities are human populations who reside in distinct geographical areas with distinct ownership over their biological resources, innovations, practices, knowledge, and technologies.⁴⁹ Article 16 of the African Model Law requires states to recognise the rights of these local communities over their biological resources, including plant varieties.⁵⁰ As such, community varieties are collectively owned by the community. The communities have community IPRs over their community varieties, practices, innovations, knowledge, and technologies.⁵¹

Community rights provisions in the African Model Law are inspired by Article 8(j) of the CBD, which provides for contracting states to respect, preserve, and

⁴⁵ Edward D Zulu, Rosemary M Makano, and Anessie Banda, 'National Experiences and Plans to Implement a *Sui Generis* System of Protection in Zambia' (Paper presented at the UPOV-WIPO-WTO Joint Regional Workshop on 'The Protection of Plant Varieties under Article 27.3(b) of the TRIPS Agreement in Nairobi from 6-7 May 1999') <<https://www.grain.org/article/entries/2121-zambia-s-approach-to-sui-generis-rights>> accessed 3 August 2017; Graham Dutfield, *Intellectual Property, Biogenetic Resources and Traditional Knowledge* (Earthscan 2004) 153.

⁴⁶ Ekpere, 'The OAU's Model Law' (n 15) 2.

⁴⁷ African Model Law.

⁴⁸ African Model Law, pts IV, V, and VI, arts 15-56.

⁴⁹ African Model Law, art 1.

⁵⁰ Article 1 of the African Model Law provides that biological resources include genetic resources.

⁵¹ African Model Law, pt IV, arts 16-22 further expands on community rights.

maintain the traditional knowledge, innovations, and practices of local communities relevant for the conservation and sustainable use of biological diversity.⁵² Global South actors, including the African countries and CSOs, were instrumental in the incorporation of provisions on community rights in the CBD.⁵³ Noah Zerbe explains that community rights in the CBD and the African Model Law were envisioned to act as a check on the capacity of private actors to monopolise innovations developed from the traditional knowledge and practices of local communities.⁵⁴ Therefore, community rights reward the historical role of local communities in maintaining biological diversity, and also provides material incentives for communities to continue such practices.⁵⁵ It is important to note that neither TRIPS nor UPOV provides for the protection of community varieties. Rather, TRIPS and UPOV grant private individual rights.

Also in contrast to TRIPS and UPOV, the African Model Law expressly provides for the protection of farmers' varieties, but it does not define the term.⁵⁶ Scholars such as Carlos Correa, Michael Halewood, and Isabel Lapena generally define farmers' varieties as plant varieties conserved and developed by farmers.⁵⁷ The protection of farmers' varieties in the African Model Law is traceable to FAO Resolution 5/89, which endorsed the protection and conservation of farmers' plant genetic resources.⁵⁸ As discussed in Chapter 1, CSOs, activists, African countries,

⁵² Egziabher, 'The African Model Law for the Protection of the Rights of Local Communities' (n 43).

⁵³ *ibid.*

⁵⁴ Zerbe, 'Biodiversity, Ownership and Indigenous Knowledge' (n 19) 499.

⁵⁵ *ibid.*

⁵⁶ While TRIPS does not expressly mention farmers' varieties, the *sui generis* option can be interpreted to include farmers' varieties. See discussions on the *sui generis* plant variety protection option under TRIPS in Chapter 3. African Model Law, art 25 provides for the protection of farmers' varieties.

⁵⁷ Michael Halewood and Isabel Lapena, 'Farmers' Varieties and Farmers' Rights: Challenges at the Crossroads of Agriculture, Taxonomy and Law' in Michael Halewood (ed), *Farmers' Crop Varieties and Farmers' Rights: Challenges in Taxonomy and Law* (Earthscan 2016) 1; Carlos Correa, 'Sui Generis Protection for Farmers' Varieties' in Michael Halewood (ed), *Farmers' Crop Varieties and Farmers' Rights: Challenges in Taxonomy and Law* (Earthscan 2016) 167-170 ('Sui Generis Protection for Farmers' Varieties').

⁵⁸ Food and Agriculture Organisation of the United Nations (FAO) Resolution 5/89 (1989), Annex to the International Undertaking on Plant Genetic Resources.

and Global South actors were instrumental in pushing for the farmers' rights provisions at the FAO.⁵⁹

Drawing from the UPOV 1978 Convention, the African Model Law provides for the protection of new varieties developed by plant breeders.⁶⁰ While the African Model Law also does not define new plant breeder's varieties, the conditions and scope of protection further expand on this provision. None of these categories of varieties specifically mentions the plant species and botanical genera for which IPRs are granted. Therefore, it can be implied that all plant genera and species are to be protected under a national law designed after the African Model Law. The recognition of these three categories of varieties reflects the attempts by the drafters of the African Model Law to recognise local communities', farmers', and commercial plant breeders' contributions to the development of plant varieties.

Conditions for Protection

The African Model Law provides different conditions of protection for the three categories of varieties. Varieties qualify as community varieties if they are identified, interpreted, and ascertained by the local community concerned.⁶¹ These community varieties are protected even if: (i) a written or oral description of the variety or its associated traditional knowledge and information exists; (ii) samples of the variety are conserved in a gene bank or other similar conservation sites; or (iii) community members generally use the variety.⁶² In essence, the key condition for registering a community variety is its identification by a local community. Common local use or *ex-situ* conservation of the variety does not preclude registration of community varieties.⁶³ Similarly, farmers' varieties are varieties with specific attributes which a community identifies.⁶⁴ Article 25(2) of the African

⁵⁹ See Chapter 1.

⁶⁰ African Model Law, arts 28-29.

⁶¹ African Model Law, art 23.

⁶² African Model Law, art 23.

⁶³ *Ex-situ* conservation is the preservation of biological diversity, including genetic resources outside their natural habitat. See African Model Law, art 1.

⁶⁴ African Model Law, art 25(2).

Model Law expressly states that farmers' varieties are not required to fulfil the distinct, uniform, and stable conditions for protection. However, the provisions on community and farmers' varieties are unclear about the specific attributes communities are required to consider. Carlos Correa astutely points out that 'the absence of general criteria [in the African Model Law] to establish eligibility [for community and farmers' varieties] might lead to significant uncertainty and competing claims about ownership.'⁶⁵

Borrowing from the UPOV 1978 Convention, breeder's varieties are considered new if they are identifiable, stable, and sufficiently homogenous.⁶⁶ A new variety is identifiable if it has one or more identifiable characteristics which are clearly distinguishable from other varieties commonly in existence at the date of application for the plant breeder's right.⁶⁷ The variety is stable in its essential characteristics if after repeated reproduction or propagation, it remains true to its description.⁶⁸ The variety is sufficiently homogenous if, subject to variations expected from particular features of its propagation, it remains the same.⁶⁹ Ekpere explains that the aim for the protection of new breeder's varieties and breeder's rights in the African Model Law was to recognise both individual and institutional investments in developing new plant varieties by providing economic rewards.⁷⁰

Scope of Coverage

The African Model Law does not provide a duration of protection for both community and farmers' varieties. Nonetheless, communities have the right to collectively benefit from the use of community and farmers' varieties, practices, and traditional knowledge.⁷¹ Local communities have the inalienable right to access, use, exchange, or share community varieties in line with customary

⁶⁵ Correa, 'Sui Generis Protection for Farmers' Varieties' (n 57) 169.

⁶⁶ African Model Law, art 29.

⁶⁷ African Model Law, art 29(a).

⁶⁸ Or where an applicant has defined a particular cycle of reproduction or multiplication, it remains true to its description at the end of each cycle. African Model Law, art 29(b).

⁶⁹ African Model Law, art 29(c).

⁷⁰ Ekpere, 'The OAU's Model Law' (n 15) 20-21.

⁷¹ African Model Law, art 16.

practices and laws.⁷² Similarly, local communities also have the exclusive rights to multiply, cultivate, use, sell, or license farmers' varieties.⁷³ Access to community varieties is subject to the prior informed consent of the concerned communities, who have the right to refuse access to their varieties.⁷⁴ Apart from the prior informed consent principle, the African Model Law provides that states and communities are entitled to a share of the earnings derived from the use of their biological resources or knowledge, directly or indirectly, in a product or production process.⁷⁵ In particular, at least 50 per cent of benefits from the use of community biological resources are to be channelled to the local communities.⁷⁶

Conversely, the African Model Law clearly sets out the duration for protecting new breeder's varieties. Plant breeders have exclusive rights over annual crops for a duration of 20 years, and exclusive rights over trees, vines, and other perennial crops for a duration of 25 years.⁷⁷ Furthermore, plant breeders have exclusive rights to produce propagating material of the variety for sale, to license, or to sell new plant varieties.⁷⁸ Yet this exclusive right is subject to farmers' rights and public policy exceptions which are also provided in the Model Law. Two key exceptions to breeders' rights are the following: (i) farmers' rights to use new breeders' varieties to develop farmers' varieties; and (ii) farmers' rights to save, use, multiply, and process farm-saved seed of protected varieties which are also provided in the Model Law.⁷⁹ Notwithstanding, farmers are prohibited from selling farm-saved seed or propagating material of a breeders' variety in the seed industry on a commercial scale.⁸⁰ In addition to the farmers' rights exceptions, breeders' rights are subject to restrictions required to protect completion practices, food security, nutritional, health, biological diversity, and farming community

⁷² African Model Law, art 21.

⁷³ African Model Law, art 25(2).

⁷⁴ African Model Law, arts 18-19.

⁷⁵ African Model Law, arts 12 and 22.

⁷⁶ African Model Law, art 22.

⁷⁷ African Model Law, art 34. These time frames commence from the day on which the application for a plant breeder's rights for the plant variety is accepted.

⁷⁸ African Model Law, art 30.

⁷⁹ The African Model Law recognises seed reuse and exchange as a central component of small-scale centred farming practices prevalent in Africa. African Model Law, art 26.

⁸⁰ African Model Law, art 26(2).

requirements or to promote other public interests.⁸¹ These exceptions seek to balance breeder's rights with political and socio-economic interests.

4.1.3. The African Model Law and Plant Variety Protection Regimes

The wide-ranging coverage of the law, conditions, and scope for protection above reflect the intentions of the drafters of the Model Law to implement different treaty obligations in a single document. The preceding section explained that the African Model Law provides for community rights, farmers' rights, and breeders' rights along with access and benefit sharing principles drawn from the CBD, the FAO International Undertaking, and the UPOV 1978 Convention. These provisions were interpreted to suit African realities. One key insight from the regime complex analysis of plant variety protection in this thesis is that the fragmentation of regimes covering plant varieties at the international level is also reflected at the national level. There are different national institutions responsible for implementing international treaties. In Nigeria, for example, there is a lack of synergy amongst the ministries of agriculture, environment, and trade that have mandates to implement the different plant variety protection treaties. Thus, what the African Model Law does is to collate the different relevant legal systems and legal principles in one document, thereby facilitating coordination amongst the institutions through the law. In essence, the African Model Law shows national law and policy-makers how to implement the conflicting obligations in the different regimes in one document. More importantly, it embodies the African position in international forums.

A brief look into history reveals that provisions on farmers' rights as well as access and benefit sharing were introduced in the CBD and the ITPGRFA because the UN – under which these treaties were negotiated – was more favourable to the Global South's demands.⁸² The Global North's dominance in TRIPS and UPOV meant that the Global South was unable to push for the provisions that favoured their

⁸¹ African Model Law, art 26(3), 31, and 33.

⁸² See Chapters 1 and 3.

national realities. As such, the African Model Law represents the plant variety protection treaty that the African negotiators in the international fora sought to establish. Indeed, Ekpere explains that:

...The intention was to create a body of regulation that enables providers of biological resources benefit from what has been negotiated at the CBD, FAO treaties, what is implicit in article 27.3(b), and what was discussed at the time in the Cartagena Protocol.... What I personally felt was that if users were busy creating conditions that meet their own special needs, then providers should also be able to conceptualise the possibility of coming together with arrangements that protect their own interests. That was the singular driving force behind the African Model Law. It creates an omnibus kind of model that if articulated into an implementable legislative instrument, will be able to deal with all users who come to the providers with any of the fragmented treaties, seeking access.⁸³

However, plant variety protection regimes have expanded since the African Model Law was adopted. For example, the Nagoya Protocol – arising from the access and benefit sharing principles in the CBD – was adopted in 2010.⁸⁴ As discussed in Chapter 3, the Nagoya Protocol expressly sets out detailed guidelines on access and benefit sharing principles which are absent in the African Model Law.⁸⁵ Notably, the adoption of the Nagoya Protocol renewed interest in the African Model Law.⁸⁶ The African Ministerial Conference on the Environment met in Cairo in March 2015, and adopted a set of guidelines on the coordinated implementation of the Nagoya Protocol in Africa.⁸⁷ The guidelines seek to build on the provisions of the African Model Law by analysing and filling gaps resulting

⁸³ Fieldwork interview with Johnson Ekpere, Former Secretary-General of the Scientific, Technical, and Research Commission of the OAU/STRC (Ibadan, Oyo State, 10 August 2015) (transcript on file with author).

⁸⁴ See discussions on the provisions of the Nagoya Protocol in Chapter 3.

⁸⁵ *ibid.*

⁸⁶ Munyi and others, *A Gap Analysis Report on the African Model Law* (n 41) 5.

⁸⁷ *African Union Practical Guidelines for the Coordinated Implementation of the Nagoya Protocol in Africa.*

from subsequent legal developments relevant to plant variety protection and biological resources at the global and regional level.⁸⁸

Looking through the TWAIL and regime complex theory lenses, the benefit of drawing inspiration from the African Model Law for a country like Nigeria is that it provides a holistic but flexible *sui generis* plant variety protection system that complies with the CBD, the ITPGRFA, and TRIPS obligations, and also prioritises the interests of Africans. From a TWAIL perspective, the African Model Law presents *sui generis* guidelines that considers the actualised experiences of the Third World peoples as the interpretative prism through which the rules of international laws are evaluated or implemented.⁸⁹ From a regime complex perspective, the African Model Law addresses one of the key consequences of the overlapping regimes for plant varieties, which is how to reconcile the conflicting legal systems and principles set out in the non-hierarchical international institutions at the national level.⁹⁰

Accordingly, the African Model Law provides a way-in to law-making for the different national institutions (ministries, agencies, departments) concerned with plant variety protection by providing guidelines on how to design a comprehensive plant variety protection system. This is useful because, rather than the different national institutions contemplating on how to design a *sui generis* system from scratch, the African Model Law provides a template or guideline for this. Chidi Oguamanam rightly advocates for the continued relevance of the African Model Law for African countries seeking to design plant variety protection systems, as it is suited for the different stakeholders in the agricultural sector in Africa.⁹¹

⁸⁸ *ibid.*

⁸⁹ Anghie and Chimni, 'Third World Approaches to International Law and Individual Responsibility in Internal Conflicts' (n 3) 78.

⁹⁰ Laurence R Helfer, 'Regime Shifting in the International Intellectual Property System' (2009) 7(1) *Perspectives on Politics* 39, 40.

⁹¹ Chidi Oguamanam, 'Breeding Apples for Oranges: Africa's Misplaced Priority over Plant Breeders Rights' (2015) *The Journal of World Intellectual Property* 1, 1.

4.1.4. Adoption of the African Model Law

Although the African Model Law represents one of the most comprehensive regimes to reconcile the conflicting provisions in the different plant variety protection treaties, it is not widely adopted in Africa.⁹² On the contrary, African countries are increasingly joining UPOV, as will be seen below. Four notable obstacles to the adoption of the African Model Law are: (i) inadequate use and prioritisation of domestic financial resources to translate the African Model Law into national laws; (ii) dearth of experts to design the national laws;⁹³ (iii) paucity of information at the national and local levels in African countries about the issues covered in the African Model Law; and (iv) external pressure on African countries from the US, the European Union (EU), and UPOV to abandon the African Model Law.

The AU experienced the first two obstacles first-hand. For example, Noah Zerbe points out that the francophone African IPRs organisation OAPI designed a UPOV 1991 Convention-compliant plant breeder's rights system while the AU was still preparing a French translation of the Model Law.⁹⁴ He explains that at the November 1999 AU workshop in Addis Ababa, the AU was notified that the French translation of the Model Law was incomplete.⁹⁵ However, hampered by lack of financial and technical capacity, the AU was only able to complete the French translation of the Model Law at its regional workshop in Algiers, Algeria in June 2000.⁹⁶ As mentioned in 4.1.1 above, it was at the 2000 workshop that the structure of the African Model Law was reorganised.⁹⁷ The final English and

⁹² Zerbe, 'Biodiversity, Ownership and Indigenous Knowledge' (n 19) 502. African countries like Zambia and Zimbabwe have plant variety protection systems that incorporate *sui generis* legal principles such as farmers' rights, breeders' rights exceptions, and disclosure of origin provisions. However, Zambia and Zimbabwe are members of the African Regional Intellectual Property Organisation (ARIPO), which is in the process of acceding to the UPOV 1991 Convention. Although Ethiopia has a plant variety protection system which incorporates *sui generis* legal principles, it is not a WTO member.

⁹³ African countries fail to retain even the few experts in the field.

⁹⁴ Zerbe, 'Biodiversity, Ownership and Indigenous Knowledge' (n 19) 503.

⁹⁵ *ibid.*

⁹⁶ *ibid.*

⁹⁷ See 4.1.1 above.

French versions of the African Model Law were also concluded at this workshop. However, by the time the final French version was ready in 2000, OAPI had already designed a plant breeder's rights system.⁹⁸ Carolyn Deere notes that the staff of national IPRs offices in francophone African countries were 'already captive audience of the OAPI and UPOV secretariats.'⁹⁹ OAPI and UPOV further persuaded the Ministry of Agriculture officials in these francophone African countries of the benefits of the plant breeder's rights system under the UPOV 1991 Convention.¹⁰⁰ Significantly, there was no national or regional consultations during the IPRs review process, thus CSOs and activists could neither contribute to it nor express reservations.¹⁰¹

Another symptom of the first two obstacles was the AU's invitation to WIPO and UPOV in June 2002 to review the African Model Law adoption process, in order to collaborate with these institutions.¹⁰² The AU had sought to request for technical assistance to further develop some provisions of the African Model Law and to promote the implementation of the Model Law within Africa.¹⁰³ This was not

⁹⁸ The African Intellectual Property Organisation (OAPI) is the francophone intellectual property organisation in Africa. UPOV Lex, 'African Intellectual Property Organisation – Agreement Revising the Bangui Agreement of 2 March 1977 on the Creation of an African Intellectual Property Organisation' (Bangui Central African Republic, 24 February 1999)

<<http://www.upov.int/upovlex/en/details.jsp?id=12622>> accessed 4 August 2017.

⁹⁹ OAPI is discussed further in 4.2 below. It was the national IPRs offices staff that were directly involved with the IPRs revision process. Carolyn Deere, *The Implementation Game: The TRIPS Agreement and the Global Politics of Intellectual Property Reform in Developing Countries* (Oxford University Press 2009) 271 (*The Implementation Game*).

¹⁰⁰ Deere, *The Implementation Game* (n 99) 271.

¹⁰¹ *ibid.* See CSOs' submissions on this: Rural Advancement Foundation International (RAFI), 'Legal Terminator Threatens Francophone Africa's Farmers: Right to Save Seed in Poor Countries May Be Eliminated as 15 African States are Pressured to Accept UPOV 91' (RAFI 17 February 1999)

<http://www.etcgroup.org/sites/www.etcgroup.org/files/publication/382/01/news_upov91.pdf> accessed 4 August 2017 ('Legal Terminator'); Nana Rosine Ngangoue and B Oeudraogo, 'Small Farmers Seed Rights Up for Grabs?' (March 1999) <<https://www.grain.org/article/entries/2009-oapi-caves-in-to-upov>> accessed 4 August 2017; Third World Network (TWN), 'Joint NGO Statement of Support for the Africa Group Proposals on Reviewing the WTO TRIPS Agreement, Article 27.3b' (August 1999)

<https://www.iatp.org/files/Joint_NGO_Statement_of_Support_0899.htm> accessed 4 August 2017.

¹⁰² Genetic Resources Action International Network (GRAIN), 'IPRs Agents Try to Derail OAU Process: UPOV and WIPO Attack Africa's Model Law on Community Rights to Biodiversity' (GRAIN June 2001) <<https://www.grain.org/article/entries/89-ipr-agents-try-to-derail-oau-process>> accessed 29 July 2017 ('IPRs Agents Try to Derail OAU Process').

¹⁰³ *ibid.*

actualised, as rather than providing suggestions and expertise on how to develop the provisions and promote the Model Law within Africa, WIPO and UPOV criticised the Model Law, questioning its legality and appropriateness.¹⁰⁴

WIPO asserted that the African Model Law's prohibition of patents on life forms is contrary to Article 27.3(b) of TRIPS, which specifically provides the patent option for plant varieties and other life forms such as microorganisms.¹⁰⁵ However, the AU argued that its exclusion of patents on life forms was pursuant to the *ordre public* and morality exception provided in Article 27.2 of TRIPS.¹⁰⁶ WIPO also challenged the community rights provisions in the African Model Law. WIPO argued that the concept of community rights in the African Model Law was insufficiently defined, as it lacked clarity unlike a patent system.¹⁰⁷ While this argument is tenable to the extent that the community rights provisions in the African Model Law lacks certain details such as the duration of community rights, two replies to this argument are as follows. First, the AU was aware that there were limitations in certain provisions of the African Model Law, such as the community rights section. It was partly for this reason that the AU had invited WIPO and UPOV to contribute to further develop the provisions of the African Model Law, not to change them. Second, as highlighted above, the provisions of the African Model Law are not final. Countries can expand and fine-tune the guidelines set out in the African Model Law to make up for its inadequacies.

For its part, UPOV offered a revised draft of the African Model Law which conformed with its 1991 Convention.¹⁰⁸ A GRAIN report on the 1999 AU meeting points out that UPOV revised over 30 of the provisions in the African Model Law.¹⁰⁹ In particular, UPOV found the provisions on farmers' rights completely

¹⁰⁴ *ibid.*

¹⁰⁵ TRIPS, art 27.3(b).

¹⁰⁶ See discussion on the patent option in Chapter 3.

¹⁰⁷ Zerbe, Biodiversity, Ownership and Indigenous Knowledge' (n 19) 504.

¹⁰⁸ GRAIN, 'IPRs Agents Try to Derail OAU Process' (n 102).

¹⁰⁹ *ibid.* The African Model Law has 68 provisions.

unacceptable and ‘ineffective’, as it favours small-scale farmers rather than private breeders and seed companies, which UPOV seeks to protect.¹¹⁰

CSOs such as the African Biodiversity Network (ABN), Gaia Foundation, GRAIN, RAFI, and TWN attempted to address the third obstacle highlighted above – the paucity of information about the issues covered in the African Model Law – by raising awareness about this at both the national and international levels.¹¹¹ In fact, ABN is an African CSO established in 1996 to promote the adoption of the African Model Law within Africa.¹¹² From the late 1990s, the ABN hosted regional and national workshops to spread information about the African Model Law, while also lobbying national governments.¹¹³ Similarly, scholars such as Ekpere, Egziabher, and Zerbe have contributed to raising awareness about the African Model Law by providing important insights into its underlying rationale which is to balance the rights of local communities, farmers, and breeders.¹¹⁴ These interventions are useful for law and policy-makers as well as for other stakeholders interested in understanding the African Model Law provisions.

The fourth obstacle to the adoption of the African Model Law highlighted above, which is pressure on African countries from the US, the EU, and UPOV to accede to the UPOV 1991 Convention, is explored next.

¹¹⁰ GRAIN, ‘IPRs Agents Try to Derail OAU Process’ (n 102).

¹¹¹ Zerbe, ‘Biodiversity, Ownership and Indigenous Knowledge’ (n 19) 503. The CSOs have hosted workshops and published papers seeking to promote the African Model Law, for example, GRAIN, ‘Beyond UPOV: Examples of developing countries preparing non-UPOV *sui generis* plant variety protection schemes in compliance with TRIPS’ (25 July 1999)

<<https://www.grain.org/article/entries/14-beyond-upov>> accessed 01 August 2017; Glenn Ashton, ‘Is Africa about to lose the right to her seed?’ (23 April 2013)

<https://www.grain.org/bulletin_board/entries/4700-is-africa-about-to-lose-the-right-to-her-seed> accessed 01 August 2017.

¹¹² African Biodiversity Network (ABN), <<http://africanbiodiversity.org/>> accessed 1 August 2017.

¹¹³ *ibid.*

¹¹⁴ See for example, Egziabher, ‘The Convention on Biological Diversity, Intellectual Property Rights and the Interests of the South’ (n 28); Egziabher, ‘The African Model Law for the Protection of the Rights of Local Communities’ (n 43); Ekpere, ‘The OAU’s Model Law’ (n 15); Ekpere, ‘African Model Law’ (n 10); Zerbe, ‘Biodiversity, Ownership and Indigenous Knowledge’ (n 19); Zerbe, ‘Contesting Privatization’ (n 19); Egziabher, Matos, and Mwila, ‘The African Group’ (n 33).

4.2. UPOV's Way-in to Africa

This part traces the avenues through which UPOV has been gradually proliferating in Africa. It seeks to understand why the same African countries which embraced the African Model Law in 1998 have acceded to the UPOV 1991 Convention that they collectively opposed because of its focus on plant breeders and limited reference to small-scale farmers.¹¹⁵ The first section of this part maps out trade agreements and economic partnerships with the US and the EU which require African countries to accede to the UPOV 1991 Convention. The second section discusses UPOV's growing traction through African regional intergovernmental organisations.

4.2.1. Trade and Investment Agreements

Although TRIPS was successfully incorporated in the WTO set of compulsory trade agreements in 1995, the delicate consensus in Article 27.3(b) created a latitude. It was this latitude that informed the African Model Law, a *sui generis* system designed by Africans to suit African countries' realities. However, the US and the EU narrowed certain Global South WTO members' choice under Article 27.3(b) of TRIPS through bilateral trade agreements and economic partnerships. As will be seen below, these trade agreements and economic partnerships push the US and the EU agendas of establishing plant breeder's rights systems in the UPOV 1991 Convention as 'the' *sui generis* option under TRIPS by specifically requiring the African countries to join UPOV. The strategy of pushing specific agendas through bilateral agreements is otherwise referred to as vertical regime-shifting.¹¹⁶ Vertical regime-shifting involves negotiating laws, rules, and implementation at levels below the multilateral level, such as at bilateral or regional levels.¹¹⁷ Global

¹¹⁵ All African countries are members of the AU. Morocco withdrew from the OAU (AU's predecessor) in 1984, because Sahrawi Arab Democratic Republic – a disputed state – was admitted as an OAU member. However, the AU readmitted Morocco as a member state on 30 January 2017.

¹¹⁶ Peter K Yu, 'International Enclosure, the Regime Complex, and Intellectual Property Schizophrenia' (2007) 1 Michigan State Law Review 1, 15-16. See also Susan Sell, 'TRIPS Was Never Enough: Vertical Forum Shifting, FTAS, ACTA, and TPP' (2011) 18(2) Journal of Intellectual Property Law 447, 451.

¹¹⁷ *ibid.*

North countries often engage in vertical regime-shifting when they are unable to achieve their goals at the multilateral level.¹¹⁸ As will be seen below, Morocco, South Africa, Tanzania, and Tunisia have trade agreements or economic partnerships that require them to join UPOV.

The US-Morocco Free Trade Agreement (FTA) requires Morocco to provide specific IPRs by ratifying or acceding to a variety of international IPRs agreements, including the UPOV 1991 Convention.¹¹⁹ The historic and comprehensive FTA was signed on 15 June 2004 and entered into force on 1 January 2006.¹²⁰ Notably, this was the US' first FTA with an African country, and second country within the Middle East and Northern Africa (MENA) region. One of the reasons the US chose to sign the bilateral agreement with Morocco was to promote trade liberalisation outside the WTO framework.¹²¹ In particular, the George Bush administration (2001 to 2009) sought to promote trade liberalisation within the Global South.¹²² As Morocco was the 2003 chair of the G-77 and Africa Group within the WTO, the US chose Morocco as its first African free trade partner.¹²³ The US concluded that Morocco was in a position to influence other Global South countries to support US' positions during WTO negotiations.¹²⁴ Similarly, Morocco is party to the

¹¹⁸ *ibid.*

¹¹⁹ From 2002, the US Congress required trade agreements to include levels of IPRs similar to those in force in the US. US Trade Act 2002, s 2102. Chapter 15 of the US-Morocco Free Trade Agreement (FTA) sets out provisions on IPRs. Article 15.2(e) provides for Morocco to ratify or accede to UPOV 1991 Convention.

<https://ustr.gov/sites/default/files/uploads/agreements/fta/morocco/asset_upload_file797_3849.pdf> accessed 28 November 2016. Other international IPRs agreements the US required Morocco to ratify or accede to include the Patent Cooperation Treaty 1970 (amended in 1979), the Convention Relating to the Distribution of Programme – Carrying Signals Transmitted by Satellite 1974, the Protocol Relating to the Madrid Agreement Concerning the International Registration of Marks 1989, the Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure 1977 (as amended in 1980), the Trademark Law Treaty 1994, the WIPO Copyright Treaty 1996, and the WIPO Performances and Phonograms Treaty 1996.

¹²⁰ Office of the United States Trade Representative, *Morocco Free Trade Agreement* <<https://ustr.gov/trade-agreements/free-trade-agreements/morocco-fta>> accessed 13 December 2016.

¹²¹ Raymond J Ahearn, 'Morocco-US Free Trade Agreement' Congressional Research Service (RS21464, 26 May 2005) 2 and 4 <<https://fas.org/sgp/crs/mideast/RS21464.pdf>> accessed 13 December 2006 ('Morocco-US Free Trade Agreement').

¹²² *ibid* 2.

¹²³ *ibid*; Group of 77 at the United Nations (UN), 'Chairmanship of the Group of 77'

<<http://www.g77.org/doc/presiding.html>> accessed 4 August 2017.

¹²⁴ Other reasons for the US-Morocco FTA include the US' objective of strengthening its relationship with Morocco due to the war against terrorism. Furthermore, the US sought to promote

Euro-Mediterranean Agreement which also obliges it to accede to the UPOV 1991 Convention.¹²⁵ With pressure from the US and the EU, Morocco designed a UPOV 1991 Convention-compliant plant breeders' rights system approved by the UPOV office. It deposited its instrument of accession to the UPOV 1991 Convention on 8 September 2006 and became a member of UPOV on 8 October 2006.¹²⁶

The EU has similar trade agreements with Tunisia and South Africa which require them to provide the IPRs systems in line with the highest international standards.¹²⁷ The EU-Tunisia Agreement specifically requires Tunisia to accede to the UPOV 1991 Convention.¹²⁸ The EU-Tunisia Agreement is part of the Euro-Mediterranean Association Agreements the EU concluded with seven southern Mediterranean countries between 1998 and 2005.¹²⁹ The agreements seek to gradually liberalise

openness, tolerance, and economic growth around the Muslim world. Jean F Crombois, 'The US-Morocco Free Trade Agreement' (2005) 10(2) *Mediterranean Politics* 219, 220. For more discussions on the US-Morocco FTA, see generally, Mustapha Sadni Jallab, Lahsen Abdelmalki, and Rene Sandretto, 'The Free Trade Agreement Between the United States and Morocco: The Importance of a Gradual and Asymmetric Agreement' (2007) 22(4) *Journal of Economic Integration* 852; Akka Ait El Mekki and Wallace E Tyner, 'The Moroccan American FTA Effects on the Agricultural and Food Sectors in Morocco' (Paper presented at the 7th Annual Conference on Global Economic Analysis, Trade, Poverty, and the Environment, 17-19 June 2004, Washington, DC).

¹²⁵ Euro-Mediterranean Agreement establishing an association between the European Communities and their Member States, of the one part, and the Kingdom of Morocco, of the other part (19 March 2000) OJEC L70/2, Annex 7, art 1

<http://trade.ec.europa.eu/doclib/docs/2006/march/tradoc_127906.pdf> accessed 4 August 2017.

¹²⁶ UPOV, 'Accession by the Kingdom of Morocco' (UPOV Notification No 99, 8 September 2006).

¹²⁷ 'Agreement on Trade, Development and Cooperation between the European Community and its Member States, of the one part, and the Republic of South Africa, of the other part (4 December 1999) OJ L311, art 46; Euro-Mediterranean Agreement establishing an association between the European Communities and their Member States, of the one part, and the Republic of Tunisia, of the other part (30 March 1998) OJEC L97/2, art 39(1).

¹²⁸ Euro-Mediterranean Agreement establishing an association between the European Communities and their Member States, of the One Part, and the Republic of Tunisia, of the Other Part; 'Council and Commission Decision of the Council and the Commission of 26 January 1998, on the conclusion of a Euro-Mediterranean Agreement establishing an association between the European Communities and their Member States, of the one part, and the Republic of Tunisia, of the other part' (98/238/EC, ECSC, 30 March 1998) OJ L 97/1, Annex 7 (1) provides that by the end of the fourth year after the entry into force of the Agreement Tunisia shall accede to the UPOV 1991 Convention. See also: GRAIN, 'TRIPS-Plus through the Back Door: How Bilateral Treaties Impose much Stronger Rules for IPRs on Life than the WTO' (27 July 2001)

<<https://www.grain.org/article/entries/5-trips-plus-through-the-back-door>> accessed 13 December 2016; GRAIN, 'Tunisia joins UPOV' (21 August 2003)

<<https://www.grain.org/article/entries/2080-tunisia-joins-upov>> accessed 13 December 2016.

¹²⁹ Euro-Mediterranean Partnership, 'Countries and Regions'

<http://ec.europa.eu/trade/policy/countries-and-regions/regions/euro-mediterranean-partnership/index_en.htm> accessed 13 August 2017.

trade in the Mediterranean area and promote economic, social, and cultural cooperation between the EU and each of the partner states. For Tunisia, like other Global South countries, the preferential access to the EU market and potential of increased EU aid attracted it to sign the agreement, albeit with the obligation to strengthen its IPRs.¹³⁰ Accordingly, Tunisia designed its UPOV 1991 Convention-compliant plant breeders' rights system and deposited its instrument of accession to the UPOV 1991 Convention on 31 July 2003.¹³¹ Tunisia became a member of UPOV on 31 August 2003.¹³²

For its part, Tanzania's accession to the UPOV 1991 Convention in October 2015 was thanks to its membership of the G8's New Alliance for Food Security and Nutrition (NAFSN).¹³³ One of Tanzania's law reform commitments under the NAFSN was to accede to the UPOV 1991 Convention. The NAFSN, launched in 2012, aims to promote agricultural productivity and reduce poverty by increasing private investment in agriculture in Africa.¹³⁴ To achieve increased agricultural productivity, participating countries commit to a package of reforms to promote private sector involvement in agriculture, including seed law reforms.¹³⁵ Tanzania and Nigeria, along with eight other African countries, are members of the NAFSN.¹³⁶ Nigeria's reform commitments and its implication on plant variety protection in the country are discussed in Chapter 6.

¹³⁰ Joseph F Francois, Matthew McQueen, and Ganeshan Wignaraja, 'European Union-Developing Country FTAs: Overview and Analysis' (2005) 33(10) *World Development* 1545, 1545. For a discussion on the EU-Tunisia agreement, see generally, Bechir Chourou, 'The free-trade agreement between Tunisia and the European Union' (2007) 3(1) *The Journal of North African Studies* 25.

¹³¹ UPOV, 'Accession by the Republic of Tunisia' (UPOV Notification No 89, 31 July 2003).

¹³² *ibid.*

¹³³ G8, 'G8 Cooperation Framework to Support the "New Alliance for Food Security and Nutrition" in Tanzania' 5

<<https://www.usaid.gov/sites/default/files/documents/1868/TanzaniaCooperationFramework.pdf>> accessed 16 December 2016 ('The New Alliance for Food Security and Nutrition in Africa'). The United Republic of Tanzania deposited its instrument of accession on 22 October 2015 and became a UPOV member on 22 November 2015 (UPOV Press Release 102, Geneva, 22 October 2015).

¹³⁴ G8, 'The New Alliance for Food Security and Nutrition in Africa' (n 133).

¹³⁵ *ibid.*

¹³⁶ Benin, Burkina Faso, Cote d'Ivoire, Ethiopia, Ghana, Malawi, Mozambique, Nigeria, Senegal and Tanzania. New Alliance for Food Security and Nutrition <<https://new-alliance.org/>> accessed 13 August 2017.

The above are examples of trade agreements or economic partnerships that expressly require African countries to accede to the UPOV Convention as ‘the’ *sui generis* system for protecting plant varieties. However, not all trade agreements explicitly mention UPOV. For example, the US African Growth and Opportunities Act (AGOA) provides that the US President can designate a specific African country as AGOA-eligible if the country has established or is making progress to establish the elimination of barriers to US trade and investments, including by protecting IPRs.¹³⁷ Similarly, the EU Economic Partnership Agreements with the African, Caribbean, and Pacific Group of States (ACP) provides *inter alia* for parties to recognise the need to ensure an adequate and effective level of protection of IPRs, industrial and commercial property rights, and other rights covered by TRIPS.¹³⁸ As will be seen next, another key way through which UPOV plant breeders’ rights system is proliferating in Africa is through regional organisations such as OAPI, ARIPO, and SADC.

4.2.2. Regional Intergovernmental Organisations

OAPI and ARIPO are the two main intergovernmental organisations responsible for coordinating IPRs in Africa. OAPI coordinates the IPRs system in francophone Africa, while ARIPO coordinates the IPRs system mainly in anglophone Africa.¹³⁹ Unlike OAPI and ARIPO, SADC is not an IPRs organisation. It was formed mainly to promote economic liberation and evolved into an economic development institution.¹⁴⁰ OAPI became the first African intergovernmental organisation to

¹³⁷ Trade and Development Act 2000 (Public Law 106-200, 106th Congress, 18 May 2000), s 104(a) (1) (C) (ii); African Growth and Opportunity Act (AGOA) <<https://ustr.gov/issue-areas/trade-development/preference-programs/african-growth-and-opportunity-act-agoa>> accessed 01 December 2016.

¹³⁸ Partnership Agreement between the members of the African, Caribbean and Pacific Group of States of the one part, and the European Community and its Members States, of the other part, signed in Cotonou on 23 June 2000 (15 December 2000) OJ, art 46(1) <<http://www.acp.int/sites/acpsec.waw.be/files/Cotonou2000.pdf>> accessed 30 November 2016.

¹³⁹ Organisation Africaine De La Propriete Intellectuelle (OAPI) <<http://www.oapi.int/>> accessed 30 November 2016; ARIPO <<http://www.aripo.org/about-aripo/membership-member-states>> accessed 30 November 2016. ARIPO’s membership was initially restricted to only English-speaking African countries, but it has subsequently accepted non-English speaking members such as Mozambique (Portuguese), Sao Tome and Principe (Portuguese), and Somalia (Somali and Arabic).

¹⁴⁰ Treaty of the Southern African Development Community

join UPOV on 10 July 2014,¹⁴¹ while ARIPO has initiated the procedure for joining UPOV.¹⁴² ARIPO has a draft plant breeders' rights legislation which the UPOV office has reviewed and confirmed to be UPOV 1991 Convention-compliant. SADC has contacted the UPOV office to request for assistance with constructing a plant breeders' rights legislation, and it has prepared draft plant variety protection legislation.¹⁴³

The rest of this section covers these organisations' journeys to UPOV. This is important because it shows how three regional organisations which have a combined membership of 44 countries have either joined or initiated the process of joining the UPOV 1991 Convention. Indeed, the regional organisations are a faster way of spreading the UPOV plant breeder's rights system in Africa. However, Nigeria is not a member of any of these regional organisations; it only has observer status in ARIPO. Nonetheless, understanding this avenue through which UPOV proliferates in Africa is useful for Nigeria to make it aware of how regional IPRs associations can shape national plant variety protection laws.

<http://www.sadc.int/files/9113/5292/9434/SADC_Treaty.pdf> accessed 01 December 2016.

¹⁴¹ UPOV, 'Members of the International Convention for the Protection of New Varieties of Plants, UPOV Convention (1961), as revised at Geneva (1972, 1978 and 1991): Status on April 15 2016' <<http://www.upov.int/export/sites/upov/members/en/pdf/pub423.pdf>> accessed 01 December 2016 ('Members of the International Convention').

¹⁴² UPOV, 'Overview of UPOV' (Publication No 437, 20 March 2017).

¹⁴³ *ibid.*

African Intellectual Property Organisation (OAPI)

OAPI was established by the Bangui Agreement of 2 March 1977.¹⁴⁴ It provides a central IPRs registration system for its 17 francophone African member states.¹⁴⁵ Four of its member states are classified as developing countries under TRIPS, the remaining 13 are classified as least developed countries.¹⁴⁶ Therefore, only four OAPI member states were obliged to comply with TRIPS at the initial deadline in 2000, and the majority have until 2021 to fulfil their TRIPS obligations.¹⁴⁷ Notwithstanding, as seen in 4.1.4 above, the French government and the UPOV office actively encouraged OAPI to revise its Bangui Agreement to comply with the UPOV 1991 Convention.¹⁴⁸ Annex X of the revised Bangui Agreement established a regional plant breeders' rights system in line with the UPOV 1991 Convention.¹⁴⁹ The UPOV office approved the provisions of the plant breeders' rights system as compliant with its 1991 Convention in its 17th extraordinary session held in Geneva on 7 April 2000.¹⁵⁰ The 1999 revised Bangui Agreement

¹⁴⁴ The Bangui IPRs Agreement sets out the IPRs regime for the French-speaking African countries. Bangui Agreement Relating to the Creation of an African Intellectual Property Organisation, Constituting a Revision of the Agreement Relating to the Creation of an African and Malagasy Office of Industrial Property (Bangui, Central African Republic, 2 March 1977), revised on 24 February 1999, entered into force on 28 February 2002

<http://www.wipo.int/wipolex/en/other_treaties/details.jsp?treaty_id=227> accessed 30 November 2016 (Bangui Agreement). The 2 March 1977 Bangui Agreement is a revision of the Libreville Agreement of 13 September 1962. For an overview of OAPI, see Caroline B Ncube, *Intellectual Property Policy, Law and Administration in Africa: Exploring Continental and Sub-regional Co-operation* (Routledge 2016) 109-121 (*Intellectual Property Policy, Law and Administration in Africa*).

¹⁴⁵ Its headquarters is in Yaoundé, Cameroon.

¹⁴⁶ The four developing countries are Cameroon, Gabon, Cote d'Ivoire, and Senegal, while the 13 least developed countries are Benin, Burkina Faso, Central African Republic, Congo, Guinea, Guinea-Bissau, Equatorial Guinea, Mali, Mauritania, Niger, Chad, and Togo.

¹⁴⁷ TRIPS, arts 65-66. WTO Council for Trade-Related Aspects of Intellectual Property Rights, 'Extension of the Transition Period under Article 66.1 for Least Developed Country Members: Decision of the Council for TRIPS of 29 November 2005' (IP/C/40, 30 November 2005); WTO Council for Trade-Related Aspects of Intellectual Property Rights, 'Extension of the Transition Period under Article 66.1 for Least Developed Country Members: Decision of the Council for TRIPS of 11 June 2013' (IP/C/64, 12 June 2013).

¹⁴⁸ The UPOV-compliant plant variety protection part – Annex X – was incorporated in 1999 as highlighted in 4.1.4 above. See Bangui Agreement and 4.1.4 above.

¹⁴⁹ Bangui Agreement, Annex X: Plant Variety Protection.

¹⁵⁰ UPOV, 'Seventeenth Extraordinary Session, Report adopted by the Council' (UPOV, 7 April 2000) 2-3 <http://www.upov.int/edocs/mdocs/upov/en/c_extr_17/c_extr_17_6.pdf> accessed 30 November 2016. OAPI is the second intergovernmental organisation to join UPOV and its 72nd member. The European Community (EC) was the first intergovernmental organisation to join UPOV on 29 June 2005.

entered into force in 2002, but the plant breeders' rights system in Annex X did not enter into force until 2006. This was because OAPI lacked the capacity to implement its provisions.¹⁵¹ For example, it neither had the financial resources nor the expertise to successfully administer a UPOV-styled plant breeders' rights system. With the French government and the UPOV office's technical and financial support, Annex X of the Bangui Agreement entered into force in 2006.¹⁵² OAPI deposited its instrument of accession to UPOV on 10 June 2014 and became party to the UPOV 1991 Convention on the same day.¹⁵³ UPOV's Secretary-General Francis Gurry pointed out that 'the accession of OAPI is a milestone in the history of UPOV and promises to help strengthen the system of plant variety protection around the world and to broaden international cooperation in this area.'¹⁵⁴

OAPI's accession to UPOV received glowing support from its protagonists, while the OAU Secretariat and CSOs such as GRAIN and RAFI criticised this move.¹⁵⁵ As discussed in 4.1 above, OAPI designed a UPOV-compliant plant breeder's rights system despite the existence of the African Model Law, which was a *sui generis* plant variety protection guideline suited to African countries' realities. OAPI itself notes that joining UPOV will increase foreign investment in plant breeding and seed industries in its member states.¹⁵⁶ Similarly, Were Gazaro, a

¹⁵¹ Oguamanam, 'Breeding Apples for Oranges' (n 91) 9.

¹⁵² Were Regine Gazaro, 'Plant Variety Protection: Which System of Protection in Members States of OAPI?' (2006) 28 World Patent Information 127, 129 ('Plant Variety Protection'). The French government funded a program called the Implementation of a Common System of Technical Examination of Plant Varieties. The Program comprised of three phases: (i) seminar for training and raising awareness for technical experts of OAPI member states, which held in Dakar from 2-3 July 2001; (ii) training of two OAPI officials as plant variety examiners in 2002; and (iii) training of technical examiners for testing distinctness, uniformity, and stability (DUS) of plant varieties held in June and July 2004. France played a role in the Plant Breeders' Rights law-making process in OAPI, like it does in other sectors in the French-speaking African countries because of the colonial links.

¹⁵³ UPOV, 'African Intellectual Property Organization (OAPI) becomes Second Intergovernmental Organization to Join UPOV' (UPOV Press Release 97, Geneva, 10 June 2014) <http://www.upov.int/edocs/pressdocs/en/upov_pr_097.pdf> accessed 30 November 2016.

¹⁵⁴ *ibid.*

¹⁵⁵ Ehsan Masood, 'Africa Splits over Ban to Patents on Plants' (1999) 398(99) Nature. See also Deere, *The Implementation Game* (n 99) 269-72.

¹⁵⁶ Marcelin Tonye Mahop, Aprinah Magarinah Shikoli, and Alhaji Tejan-Cole, 'Intellectual Property Protection of New Varieties of Plants in Sub-Saharan Africa: Overview of Existing Regimes (Part 1)' (2015) 14(3) Bioscience Law Review 75, 84.

patent examiner and head of patent service in OAPI, submits that the OAPI Plant Breeders' Rights system provides opportunities for plant breeders in its member states, which will in turn grant farmers access to improved varieties resulting in improved quantity and quality of products, and leading to 'overall economic development.'¹⁵⁷

The plant breeders' rights provisions in the Bangui Agreement modelled after the UPOV 1991 Convention contradicts the African Heads of State decision in 1998 to establish plant variety protection systems in Africa based on the African Model Law, as well as the African Group's (which includes OAPI member states) common position at the TRIPS Council and other international forums.¹⁵⁸ The Bangui Agreement ratification period also coincided with the EU Cotonou Agreement and the US AGOA that sets out stronger IPRs systems as one of the conditions for trade agreements which OAPI countries such as Cote d'Ivoire and Gabon sought to benefit from.¹⁵⁹

Carolyn Deere argues that national economic interests clearly fail to explain why OAPI chose to revise its Bangui Agreement.¹⁶⁰ In addition, Deere explains that external pressure does not sufficiently explain OAPI's choice. She argues that more credible reasons are the institutional arrangements for IPRs decision-making in francophone Africa and the pro-IPRs capacity building.¹⁶¹ WIPO, WTO, UPOV, the French Intellectual Property office (INPI), and the European Patent Office (EPO) are the main providers of capacity-building in the region.¹⁶² Their main goals are to promote early and swift compliance with TRIPS, and the need for protecting IPRs in general.¹⁶³ Using their technical knowledge as well as infrastructural and financial support to government offices and officials in the

¹⁵⁷ Gazaro, 'Plant Variety Protection' (n 152) 130.

¹⁵⁸ Deere, *The Implementation Game* (n 99) 265-66.

¹⁵⁹ Both the AGOA and the EU Cotonou Agreements were signed in 2000, while the Bangui Agreement was signed in 1999 and entered into force in 2002. Deere, *The Implementation Game* (n 99) 269.

¹⁶⁰ Deere, *The Implementation Game* (n 99) 260.

¹⁶¹ *ibid.*

¹⁶² *ibid* 279.

¹⁶³ *ibid.*

region, the donors influence staff of the OAPI secretariats and national offices through three main techniques: (a) socialisation, i.e. frequent seminar and conference participation; (b) co-option, i.e. personal or institutional incentives; (c) conversion, i.e. trainings; or through a combination of the three.¹⁶⁴ Overall, the donor international organisations influenced a group of IP officials in OAPI and OAPI member states who support stronger IPRs in the region.¹⁶⁵ The influence of the international organisations on OAPI officials is reflected in Gazaro's remarks highlighted above.

In addition, the decision-making phase leading up to OAPI joining UPOV was a closed process. For example, the OAPI Secretariat presented the revised Bangui Agreement to OAPI member states without formal substantive state negotiations or parliamentary debates.¹⁶⁶ One reason for this is that IPRs decision-making are generally considered technical issues in francophone Africa, handled primarily by IPRs officials in OAPI or donor agencies such as WIPO or INPI.¹⁶⁷ As such, details of IPRs systems or implementing TRIPS provisions are generally not included in broader national policies.¹⁶⁸ In fact, parliamentarians in francophone African countries knew little about IPRs, and were therefore unable to monitor or participate in IPRs policy or decision-making.¹⁶⁹ There were also other significant events ongoing at the national level. At least four OAPI member states were in the middle of a civil war and similar domestic unrests, impeding the space for substantive debates about suitable IPRs systems.¹⁷⁰ Furthermore, the OAPI member states did not have national or regional IPRs policies to inform their decisions about fulfilling TRIPS obligations.¹⁷¹ There was also no proof of

¹⁶⁴ *ibid.*

¹⁶⁵ *ibid.*

¹⁶⁶ *ibid.* 261; Hans Morten Haugen, 'Inappropriate Processes and Unbalanced Outcomes: Plant Variety Protection in Africa Goes Beyond UPOV 1991 Requirements' (2015) 18(5) *The Journal of World Intellectual Property* 196, 200 ('The Inappropriate Processes and Unbalanced Outcomes').

¹⁶⁷ Deere, *The Implementation Game* (n 99) 261.

¹⁶⁸ *ibid.*

¹⁶⁹ *ibid.*

¹⁷⁰ Chad had political instability throughout the 1990s, Cote d'Ivoire had internal conflicts, while Guinea-Bissau and Congo were in civil war from 1998 to 1999. For discussions about the political climate in the francophone African region, see generally, Jeffrey Herbst, *States and Power in Africa* (Princeton University Press 2000).

¹⁷¹ Deere, *The Implementation Game* (n 99) 261.

consultations with stakeholders throughout the revision process.¹⁷² For instance, the AU secretariat and international CSOs with expertise and experience in the dynamics of IPRs law-making were not consulted.

Overall, OAPI's decision to join UPOV was driven by the influence of external institutions and lack of harmonisation within Africa. This lack of harmonisation resulted in the contradictions between the African Group's submissions to forums such as the TRIPS Council, the African Model Law, and OAPI's Bangui Agreement. However, the lack of harmonisation and contradictions are not peculiar to OAPI, as ARIPO also appears to be reversing from the African Model Law.

African Regional Intellectual Property Organisation (ARIPO)

ARIPO was established in 1976 following the recommendation from a regional seminar on patents and copyrights for a regional IP organisation for anglophone African countries.¹⁷³ The United Nations Economic Commission for Africa (UNECA) and WIPO assisted the anglophone African countries with the establishment of the regional organisation.¹⁷⁴ A draft Agreement on the Creation of the Industrial Property Organisation for English-speaking Africa (ESARIPO) was adopted by a Diplomatic Conference in Lusaka, Zambia in December 1976.¹⁷⁵ The name of the organisation was subsequently changed to African Regional Industrial Property Organisation in 1985 following an amendment of the Lusaka Agreement to open the organisation's membership to all African member states of the UNECA and AU.¹⁷⁶ The organisation's name was changed a second time in

¹⁷² RAFI, 'Legal Terminator' (n 101); GRAIN 'OAPI Undermines Farmers Rights in Francophone Africa' (GRAIN 2002).

¹⁷³ ARIPO, <<http://www.aripo.org/about-aripo>> accessed 30 November 2016. The seminar was held in Nairobi in the early 1970s. For an overview on ARIPO, see Ncube, *Intellectual Property Policy, Law and Administration in Africa* (n 144) 98- 109.

¹⁷⁴ ARIPO, <<http://www.aripo.org/about-aripo>> accessed 30 November 2016.

¹⁷⁵ *ibid.*

¹⁷⁶ Lusaka Agreement on the Creation of the African Regional Intellectual Property Organisation (Adopted on 9 December 1976, entered into force on 15 February 1978) <http://www.wipo.int/wipolex/en/other_treaties/details.jsp?treaty_id=202> accessed 30 November 2016.

¹⁷⁶ ARIPO, 'ARIPO: Who we are & What we do' (ARIPO Secretariat, Harare, Zimbabwe, February 2016) 9.

2003 to include copyright and related rights, with the African Regional ‘Industrial’ Property Organisation changed to African Regional ‘Intellectual’ Property Organisation.¹⁷⁷ ARIPO has 19 members and a head office in Harare, Zimbabwe.¹⁷⁸ Unlike OAPI that only has one IPRs instrument – the Bangui Agreement – for all IPRs genres, ARIPO has separate IPRs instruments for each type of IPRs. The Harare Protocol is on Patents and Industrial Designs, the Banjul Protocol is on Marks, the Swakopmund Protocol is on the Protection of Traditional Knowledge and Expressions of Folklore, while the Arusha Protocol – which is yet to enter into force – is on the Protection of New Plant Varieties.¹⁷⁹

The Arusha Protocol on the Protection of New Plant Varieties dates back to 2009, when the ARIPO Council of Ministers approved the initiation of work to develop a plant variety protection protocol, with a request to the ARIPO office to immediately implement the decision.¹⁸⁰ At the request of the ARIPO office, the UPOV office provided technical assistance that guided ARIPO in the preparation of a draft Plant Variety Protection Protocol which complied with the UPOV 1991 Convention.¹⁸¹ After considering different draft laws, the ARIPO Council of Ministers approved a ‘Draft Legal Framework for the Protection of New Varieties of Plants’ (Draft Legal Framework) in 2013, which the UPOV office confirmed as

¹⁷⁷ *ibid* 10. The name was changed following a decision of the Administrative Council at its 27th Session held in 2003.

¹⁷⁸ ARIPO’s 19 members are Botswana, the Gambia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mozambique, Namibia, Rwanda, Sao Tome and Principe, Sierra Leone, Somalia, Sudan, Swaziland, Republic of Tanzania, Uganda, Zambia, and Zimbabwe.

¹⁷⁹ The Administrative Council of ARIPO adopted the Harare Protocol in December 1982, the Banjul Protocol in 1993, and the Swakopmund Protocol in 2010. ARIPO, ‘The ARIPO Protocols’ <<http://www.aripo.org/about-aripo/legal-framework>> accessed 25 November 2016.

¹⁸⁰ Tshimanga Kongolo, *African Contributions in Shaping the Worldwide Intellectual Property System* (Ashgate 2013) 104; Ncube, *Intellectual Property Policy, Law and Administration in Africa* (n 144) 107; ARIPO, ‘Consideration of the Revised ARIPO Legal Framework for Plant Variety Protection’ (Kampala, Uganda, 28-29 November 2013); UPOV, ‘Examination of the Conformity of the Draft ARIPO Protocol for the Protection of New Varieties of Plants with the 1991 Act of the UPOV Convention’ (31st Extraordinary Session, Geneva, 11 April 2014) <http://www.upov.int/edocs/mdocs/upov/en/c_extr_31/c_extr_31_2.pdf> accessed 25 November 2016.

¹⁸¹ UPOV, ‘Examination of the Conformity of the Draft ARIPO Protocol for the Protection of New Varieties of Plants with the 1991 Act of the UPOV Convention’ (n 180). The UPOV office provided assistance based on the UPOV/INF/6 ‘Guidance for the Preparation of Laws based on the 1991 Act of the UPOV Convention’.

compliant with the UPOV 1991 Convention in 2014.¹⁸² The UPOV office concluded that ARIPO members would be allowed to deposit their instruments of accession to the UPOV Convention if the Draft Legal Framework is adopted without changes and enters into force.¹⁸³ This Draft Legal Framework was adopted as the ‘Arusha Protocol for the Protection of New Varieties of Plants’ (Arusha Protocol) by the ARIPO Diplomatic Conference in 2015.¹⁸⁴ However, the Arusha Protocol is not yet operational. It will enter into force 12 months after at least four ARIPO members deposit their instrument of ratification or accession. Similar to OAPI, majority of the ARIPO members (13 out of 19) are categorised as least developed countries under TRIPS.¹⁸⁵ Thus, they are not under pressure to fulfil the TRIPS obligations because least developed countries have at least until 2021 to fulfil their TRIPS obligations.¹⁸⁶

Although ARIPO aligned itself with the African Model Law in 1999 after its francophone counterpart OAPI designed a plant breeder’s rights system modelled on the UPOV 1991 Convention, the adoption of the Arusha Protocol clearly changed this position.¹⁸⁷ Indeed, the development of the Arusha Protocol has some similarities with OAPI’s Bangui Agreement.¹⁸⁸ International institutions such as UPOV, the US Patent and Trademark Office (USPTO), the EU Community Plant Variety Office (CPVO), the OAPI, the French National Seed and Seedling Association, and the seed industry associates attended expert meetings and advised

¹⁸² UPOV confirmed this during its 31st extraordinary session which was held on 11 April 2014. UPOV, ‘UPOV Council holds its Thirty-First Extraordinary Session’ (UPOV Press Release 96, Geneva, 11 April 2014) <http://www.upov.int/edocs/pressdocs/en/upov_pr_096.pdf> accessed 25 November 2016.

¹⁸³ UPOV, ‘UPOV Council holds its Thirty-First Extraordinary Session’ (n 182).

¹⁸⁴ ARIPO, ‘ARIPO Protocol for the Protection of New Varieties of Plants Adopted’ <<http://www.aripo.org/news-events-publications/news/item/69-aripo-protocol-for-the-protection-of-new-varieties-of-plants-adopted>> accessed 25 November 2016.

¹⁸⁵ The least developed countries are the Gambia, Lesotho, Liberia, Malawi, Mozambique, Rwanda, Sao Tome and Principe, Sierra Leone, Somalia, Sudan, Republic of Tanzania, Uganda, and Zambia.

¹⁸⁶ See discussion on OAPI above.

¹⁸⁷ RAFI, ‘TRIPS Traps for Small Farmers: The Impact of Intellectual Property Rights on Sustainable Food Security and Farm Families Remains to be Felt’ (RAFI Genotype 1999); Haugen, ‘The Inappropriate Processes and Unbalanced Outcomes’ (n 166) 196.

¹⁸⁸ See discussion on OAPI above.

on the draft legislations.¹⁸⁹ As seen above, the UPOV office provided guidance and assistance in the development of the draft legislation in 2011 and its revised version in 2013.¹⁹⁰ Thus, despite its 1999 statement about aligning with the African Model Law, ARIPO failed to consult with the AU while constructing its draft legislation.¹⁹¹ CSOs also had minimal participation in the ARIPO plant variety protection law-making process.¹⁹² CSOs were only invited to ARIPO workshops two times: in July 2013 and in October 2014.¹⁹³ The failure to consult the AU and the limited participation of CSOs could be linked to the Global North state and non-state actors influence in the law-making process.¹⁹⁴

The Alliance for Food Sovereignty in Africa (AFSA) along with other CSOs and interested stakeholders have actively criticised and attempted to stop the progress of the Arusha Protocol.¹⁹⁵ These CSOs indicate that certain provisions of the ARIPO Arusha Protocol exceed the UPOV 1991 Convention provisions. For

¹⁸⁹ Haugen, 'The Inappropriate Processes and Unbalanced Outcomes' (n 166) 204. ARIPO's October 2014 workshop was organised in cooperation with the US Patent and Trademark Office (USPTO).

¹⁹⁰ UPOV provides guidance partly through a document: 'Guidance for the Protection of Laws based on the 1991 Act of the UPOV Convention' (UPOV/INF/6).

¹⁹¹ Haugen, 'The Inappropriate Processes and Unbalanced Outcomes' (n 166) 204-06.

¹⁹² *ibid.*

¹⁹³ *ibid.*

¹⁹⁴ See the Global North participants in the ARIPO meetings mentioned above.

¹⁹⁵ The Alliance for Food Sovereignty in Africa (AFSA) is a Pan-African platform comprising of CSOs and farmer organisations involved in the food sovereignty movement in Africa. See for example, AFSA, 'AFSA appeals to ARIPO Members for the Postponement of Diplomatic Conference and National Consultations' (3 November 2014)

<<http://www.apbrebes.org/files/seeds/AFSA%20POSTPONEMENT.pdf>> accessed 4 December 2016 ('AFSA appeals to ARIPO Members'); AFSA and other CSOs, 'ARIPO's Draft Protocol for the Protection of New Varieties of Plants (Draft Protocol) Undermines Farmers' Rights, Lacks Credibility & Legitimacy' (Open letter to members of UPOV) (14 April 2014)

<<https://viacampesina.org/en/index.php/main-issues-mainmenu-27/biodiversity-and-genetic-resources-mainmenu-37/1591-aripo-s-draft-protocol-for-the-protection-of-new-varieties-of-plants-draft-protocol-undermines-farmers-rights-lacks-credibility-legitimacy>> accessed 4 December 2016; AFSA, 'AFSA Submission for Urgent Intervention in Respect to Draft ARIPO Plant Variety Protection Protocol (PVP) and Subsequent Regulations' (July 2014)

<<http://acbio.org.za/wp-content/uploads/2015/02/AFSA-Submission-ARIPO-PVP-Protocol.pdf>> accessed 4 December 2016; AFSA, 'Appeal to ARIPO and African Union Member States and UNECA for an Effective ARIPO Protocol Supportive of Farmers' Rights and the Right to Food' (Harare, Zimbabwe, 29 October 2014) <<http://www.ip-watch.org/weblog/wp-content/uploads/2014/11/AFSA-statement.pdf>> accessed 4 December 2016; AFSA, 'AFSA's Comments on ARIPO's Responses to Civil Society: Draft Legal Framework for Plant Variety Protection' (2014) <<http://acbio.org.za/wp-content/uploads/2015/02/AFSA-letter-ARIPO-March2014-.pdf>> accessed 4 December 2016.

example, the Arusha Protocol provides for the protection of all plant genera and species from the date it comes into force, while the UPOV 1991 Convention only specifies that its provisions should apply to at least 15 plant genera or species when it enters into force.¹⁹⁶ The inclusion of this provision may be linked to the range of actors that supported ARIPO in the preparation of the Protocol, such as the USPTO and the EU CVPO. CSOs also raised the ‘usual’ concerns about the effects of the draft law on the small-scale centred farming practices in the ARIPO member states as highlighted below.¹⁹⁷

First, the CSOs raised concerns about the unsuitability of the UPOV 1991 Convention for African countries.¹⁹⁸ This is linked to concerns that UPOV does not recognise the traditional and cultural farming practices in Africa. Second, the CSOs raised concerns about non-recognition of access and benefit sharing principles set out in the CBD.¹⁹⁹ The CSOs sought to ensure that plant genetic resources and associated traditional knowledge in Africa are not misappropriated.²⁰⁰ Third, the CSOs raised concerns about absence of farmers’ rights and farmers’ involvement in decision-making processes, as set out in the ITPGRFA.²⁰¹ The CSOs assert that farmers’ rights, such as the rights to save, reuse, exchange, and sell farm-saved seeds, are important to small-scale farming in

¹⁹⁶ Arusha Protocol for the Protection of New Varieties of Plants, art 3.2(i). Other provisions that go beyond the UPOV 1991 Convention are Article 15.2 allowing the right-holder withhold confidential information, Article 22.3 on remuneration paid by small-scale commercial farmers, and Article 35 on enforcement provisions. For discussions on these, see generally, Haugen, ‘The Inappropriate Processes and Unbalanced Outcomes’ (n 166) 206.

¹⁹⁷ ‘Civil Society Concerned with ARIPO’s Draft Regional Policy and Legal Framework for Plant Variety Protection’ (Letter to the DG of ARIPO, 6 November 2012) <<https://acbio.org.za/wp-content/uploads/2015/02/CSOconcernsonARIPO-PVPframework1.pdf>> accessed 16 November 2016; ‘Comments on the revised draft regulations (draft 3) for implementing the Arusha Protocol for the Protection of New Varieties of Plants’ (Prepared by the African Centre for Biodiversity (ACB), TWN, endorsed by the AFSA, 16 November 2016) <http://acbio.org.za/wp-content/uploads/2016/11/ARIPO_regs_comments.pdf> accessed 16 November 2016.

¹⁹⁸ *ibid.*

¹⁹⁹ *ibid.* For access to genetic resources, CSOs have questioned the failure of the Arusha Protocol to provide for requirements on ‘disclosure of origin’ and ‘prior informed consent’. Disclosure of origin provisions will ensure farmers’ varieties used in developing protected new varieties are identified, and facilitate the implementation of benefit sharing.

²⁰⁰ *ibid.* See also Bram De Jonge, ‘Plant Variety Protection in Sub-Saharan Africa: Balancing Commercial and Smallholder Farmers’ Interests’ (2014) 7(3) *Journal of Politics and Law* 100, 103 (‘Plant Variety Protection in Sub-Saharan Africa’).

²⁰¹ Except Botswana, Mozambique, and the Gambia, other ARIPO members are signatories to the ITPGRFA.

Africa. Fourth, the CSOs raised concerns about the distinctiveness, uniformity, and stability (DUS) criteria for protection which marginalises farmers' and farming communities' varieties.²⁰² In this regard, the CSOs also raised concerns about replacing traditional varieties with uniform commercial varieties.²⁰³ Overall, the CSOs concluded that the Arusha Protocol contradicts the African position in international fora and the African Model Law.²⁰⁴

Despite the CSOs interventions, the Arusha Protocol has not been revised. Indeed, UPOV still lists ARIPO as one of the 'one of the intergovernmental organisations which have initiated the procedure of acceding to the UPOV Convention.'²⁰⁵ Nonetheless, the ARIPO Arusha Protocol has not entered into force. As discussed next, CSOs also raise concerns about SADC's similarly structured Draft Protocol for the Protection of New Varieties of Plants (PVP Protocol), which is also modelled on the UPOV 1991 Convention.²⁰⁶

Southern African Development Community (SADC)

As highlighted in the opening paragraph of this section, SADC is not an IPRs organisation like OAPI and ARIPO. It was founded *inter alia* to promote economic growth, enhance the quality of life, and to promote peace in the Southern African region.²⁰⁷ The nine founding members, who were also frontline (that is, anti-apartheid) states, instituted strategies to reduce economic dependence on South Africa.²⁰⁸ On 1 April 1980, these frontline states formed the Southern African Development Coordination Conference (SADCC), the predecessor to SADC in

²⁰² De Jonge, 'Plant Variety Protection in Sub-Saharan Africa' (n 200) 103.

²⁰³ 'Civil Society Concerned with ARIPO's Draft Regional Policy and Legal Framework for Plant Variety Protection' (n 197) 1.

²⁰⁴ *ibid* 2.

²⁰⁵ UPOV, 'Overview of UPOV' (n 142).

²⁰⁶ De Jonge, 'Plant Variety Protection in Sub-Saharan Africa' (n 200) 102-03.

²⁰⁷ Southern African Development Community (SADC), 'History and Treaty' <<http://www.sadc.int/about-sadc/overview/history-and-treaty/>> accessed 06 December 2016. For an overview on SADC, see generally, Ncube, *Intellectual Property Policy, Law and Administration in Africa* (n 144) 83-5.

²⁰⁸ SADC, 'History and Treaty' (n 207).

Lusaka, Zambia.²⁰⁹ SADCC, formed mainly to promote economic liberation, evolved into an economic development body following the signing of the Declaration and Treaty of SADC in Namibia on 17 August 1992.²¹⁰ SADC currently has 15 member states, including South Africa which joined in 1994 at the end of the apartheid.²¹¹

SADC is particularly active in promoting trade relations with the Global North. Indeed, it was the first African regional organisation to conclude an Economic Partnership Agreement with the EU, under the EU Cotonou Agreement.²¹² Furthermore, it leads the movement for a Free Trade Zone in Africa along with the Common Market for Eastern and Southern Africa (COMESA) and the East African Community (EAC).²¹³ Chidi Oguamanam points out that with SADC's global outlook, its plant variety protection initiative is unsurprising to analysts.²¹⁴ SADC relies on a number of its Treaty provisions such as 'achieving complementarity between national and regional strategies and programs' to justify its draft Protocol for the Protection of New Varieties of Plants in the SADC region in 2012.²¹⁵ The UPOV official members page shows that SADC has contacted the UPOV office to

²⁰⁹ *ibid.*

²¹⁰ Treaty of the SADC.

²¹¹ The 15 SADC members are Angola, Botswana, Democratic Republic of the Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe. See <<http://www.sadc.int/member-states/>> accessed 01 December 2016. SADC's objectives include the following: to achieve development and economic growth, alleviate poverty, enhance standard and quality of life of Southern African peoples, and support socially disadvantaged through regional integration; to achieve complementarity between national and regional strategies and programmes; to promote and defend peace and security; to evolve common political values, systems and institution; and to achieve sustainable utilisation of natural resources and effective protection of the environment. See Treaty of the SADC, art 5 for its objectives.

²¹² EC, 'Trade: Southern African Development Community (SADC)' <http://ec.europa.eu/trade/policy/countries-and-regions/regions/sadc/index_en.htm> accessed 2 December 2016.

²¹³ The COMESA-EAC-SADC Africa Free Trade Area was launched in Sharm El Sheik, Egypt by 26 member states on 10 June 2015. It will stretch from Cape Town to Cairo to create an integrated market, with a combined population of about 600 million people, and a Gross Domestic Product (GDP) of about USD 1 trillion. SADC, 'COMESA-EAC-Tripartite Free Trade Area Launched' (15 June 2015) <<https://www.sadc.int/news-events/news/comesa-eac-sadc-tripartite-free-trade-area-launched/>> accessed 2 December 2016.

²¹⁴ Oguamanam, 'Breeding Apples for Oranges' (n 91) 11.

²¹⁵ Treaty of the SADC, art 5.1(e).

request for assistance in drafting its plant variety protection law modelled on the UPOV 1991 Convention.²¹⁶

Similar to the oppositions to ARIPO's Arusha Protocol, CSOs called for the rejection of SADC's PVP Protocol.²¹⁷ CSOs raised similar concerns highlighted in the discussion on ARIPO's Arusha Protocol above, which revolve around the unsuitability of the UPOV 1991 Convention provisions to small-scale centred farming practices.²¹⁸ CSOs also raised concerns about SADC's lack of consultation and communication with the AU and CSOs, farmers during the drafting of the PVP Protocol.²¹⁹ However, as opposed to OAPI and ARIPO, SADC addressed the lack of public participation and consultation concerns, and has made changes to its PVP Protocol in line with the CSOs' interventions. SADC invited AFSA and other CSOs to its March 2014 Regional Workshop in Johannesburg, South Africa to review the draft PVP Protocol.²²⁰

After intense and contentious discussions, AFSA succeeded in influencing SADC member states to amend certain key provisions in the draft PVP Protocol, including 'disclosure of origin' and 'farmers' rights.'²²¹ For example, the draft PVP Protocol did not provide for disclosure of origin. However, AFSA members asserted that a disclosure of origin provision, which requires users of biological resources to disclose the source of those resources in IPRs applications, ensured that farmers'

²¹⁶ UPOV, 'International Union for the Protection of New Varieties of Plants' (Publication No 437, 8 November 2016) 1, 2 <http://www.upov.int/edocs/pubdocs/en/upov_pub_437.pdf> accessed 23 November 2016.

²¹⁷ 'Civil Society Concerned with the Draft Protocol for the Protection of New Varieties of Plants (Plant Breeders Rights) in the Southern African Development Community Region (SADC)' (2 April 2013) <<http://acbio.org.za/wp-content/uploads/2015/02/CSO-submission-SADC.pdf>> accessed 23 November 2016.

²¹⁸ *ibid.*

²¹⁹ AFSA, 'AFSA makes Small Gains for Farmers' Rights in Draft SADC PVP Protocol (A Briefing Paper)' 4 <<http://acbio.org.za/wp-content/uploads/2015/02/AFSA-Briefing.pdf>> accessed 23 November 2016 ('AFSA makes Small Gains for Farmers' Rights in Draft SADC PVP Protocol').

²²⁰ The ACB, Zimbabwe Small-Scale Organic Farmers Forum (ZIMSOFF), East and Southern Africa Farmers Forum (ESAFF), Centre for Environmental Policy and Advocacy (CEPA), Tanzania Alliance for Biodiversity (TABIO), Community Development Technology Trust (CTDT), and the Food Sovereignty Campaign/Surplus People's Project (SPP) participated in the workshop. AFSA, 'AFSA makes Small Gains for Farmers' Rights in Draft SADC PVP Protocol' (n 219) 5.

²²¹ AFSA, 'AFSA makes Small Gains for Farmers' Rights in Draft SADC PVP Protocol' (n 219) 6.

or community varieties used to develop improved varieties are identified and rewarded.²²² The SADC Secretariat noted that, as it did not intend to exploit farmers, it would include a provision in the PVP Protocol requiring applicants to state that the resources and materials acquired for breeding, evolving, or developing varieties were lawfully acquired.²²³

While the draft PVP Protocol provided farmers' rights (as exceptions to breeder's rights), AFSA argued that these rights were inadequate as they limited small-scale farmers' practices. Articles 27 and 28 of the draft PVP Protocol state that plant breeders have exclusive rights to produce and multiply propagating material of the protected variety, package for purposes of propagation, and sell, market, export, import and store the protected variety. Breeders also have exclusive rights to harvested materials, including the entire plants and parts of plants. The exception to breeders' rights directly relevant to farmers' rights as provided in Article 28(d) of the draft PVP Protocol states that:

Acts done by subsistence farmers for the use for propagating purposes, on their own holdings, the product of the harvest which they have obtained by planting, on their own holdings the protected variety or varieties covered in Article 27(3) (a) (i) or (ii) of this Protocol.

AFSA members explained that this plant breeders' rights exception (or farmers' rights) was modelled on Article 15(2) of the UPOV 1991 Convention, and it prohibits small-scale farmers from exchanging, bartering, or selling products of their harvests derived from replanting farm-saved seeds of protected varieties.²²⁴ A compromise plant breeders' rights exception was redrafted, as follows:

Acts done by a farmer to save, sow, re-sow or exchange for non-commercial purposes his or her farm produce, including seed of a protected

²²² *ibid.* See also discussions on 'disclosure of origin' in Chapter 3.

²²³ AFSA, 'AFSA makes Small Gains for Farmers' Rights in Draft SADC PVP Protocol' (n 219) 6.

²²⁴ *ibid.* 7.

variety, within reasonable limits and subject to the legitimate interests of the holder of the breeder's right. The reasonable limits and the means of safeguarding the legitimate interests of the holder of the breeder's right shall be prescribed.²²⁵

Although this provision expands the initial draft provision, it is open-ended, as its benefits to small-scale farmers depend on how the 'non-commercial purposes' and 'reasonable limits and safeguarding the legitimate interests of the holder of the breeder's right' clauses are interpreted in the SADC PVP regulations.

Apart from OAPI, ARIPO, and SADC discussed in this section, the EAC is also considering drafting a plant variety protection system in line the UPOV 1991 Convention.²²⁶ Kenyan consultant Evans Sikinyi stated in his presentation during a seminar on the enforcement of plant breeders' rights in Africa – which was held in Vietnam from 7 to 8 September 2016 – that EAC member states have started initiatives to develop plant variety protection systems modelled on the UPOV 1991 Convention.²²⁷ This EAC push towards UPOV is unsurprising, as five of the six EAC members are also members of ARIPO, which as seen above has also adopted a PVP Protocol. Indeed, Kenya and Tanzania – both active members of the EAC and ARIPO – already have UPOV-styled plant variety protection systems.

²²⁵ Redrafted Article 28(d) of the draft SADC PVP Protocol. AFSA, 'AFSA makes Small Gains for Farmers' Rights in Draft SADC PVP Protocol' (n 219) 7.

²²⁶ Evans Sikinyi, 'Seminar on the Enforcement of Plant Breeders' Rights under the UPOV Convention: Experiences of PVP implementation and Enforcement in Africa' (Hanoi, Vietnam, September 7-8 2016) 3

<http://www.upov.int/export/sites/upov/meetings/en/2016/enforcement_seminar_viet_nam/7_sikinyi_in_africa.pdf> accessed 23 November 2016 ('Seminar on the Enforcement of Plant Breeders' Rights under the UPOV Convention'). EAC is an intergovernmental organisation consisting of six East African member states Burundi, Kenya, Rwanda, South Sudan, Tanzania, and Uganda. 'EAC at a Glance', East African Community – One People, One Destiny <<http://www.eac.int/>> accessed 23 November 2016.

²²⁷ Sikinyi, 'Seminar on the enforcement of Plant Breeders' Rights under the UPOV Convention' (n 226) 3.

4.3. African Countries in UPOV

4.1 and 4.2 above cover the African Union's position on plant variety protection embodied in the African Model Law and the avenues through which UPOV has gained entry into Africa. This part examines UPOV membership at the national level in Africa. This is important in the exploration of the African countries' increasing divergence from the African Model Law and move towards UPOV because it shows the third avenue through which UPOV is proliferating within Africa, which is pressure from the seed companies. Out of UPOV's five African member states, only South Africa and Kenya were members of UPOV prior to TRIPS.²²⁸ Morocco, Tanzania, and Tunisia joined UPOV post-TRIPS.²²⁹ 4.2 above explains the reasons for these countries' UPOV membership. Morocco, Tanzania, and Tunisia have trade agreements with the US and/or EU which require them to accede to the UPOV 1991 Convention. South Africa has the most industrialised plant breeding sector in Africa, and also has a trade agreement with the EU which requires it to protect IPRs with the highest international standards.

The puzzling national plant variety protection legislation here is Kenya. Unlike the other African countries, Kenya does not have any direct trade agreements with the US or the EU requiring it to accede to the UPOV 1991 Convention. Furthermore, Kenya aligns with the African position at the TRIPS Council and the African Model Law.²³⁰ In fact, Kenya is a significant interlocutor on behalf of the African Group at the TRIPS Council.²³¹ Yet, when fulfilling its obligations to protect plant varieties under Article 27.3(b) of TRIPS, its audacious 'Geneva rhetoric' is not reflected in its 'national reality.'²³² Notably, Kenya is also party to both the CBD and the ITPGRFA, while its Constitution mandates it to enact legislation that

²²⁸ All African members of UPOV except South Africa are party to the UPOV 1991 Convention. South Africa is party to the UPOV 1978 Convention.

²²⁹ See discussion in 4.2 above.

²³⁰ Recall from 4.1 above that the 1997 OAU/STRC meeting was co-hosted by KIPi.

²³¹ See for example, WTO, 'Communication from Kenya on Behalf of the African Group, Review of Provisions of Article 27.3(b)' (n 2); WTO, 'Communications from Kenya on Behalf of the African Group' (Preparations for the 1999 Ministerial Conference, 6 August 1999) WT/GC/W/302.

²³² Dwijen Rangnekar, 'Geneva Rhetoric, National Reality: The Political Economy of Introducing Plant Breeders' Rights in Kenya' (2013) *New Political Economy* 1 ('Geneva Rhetoric, National Reality') 1.

recognises and protects the ownership and use of indigenous seeds and plant varieties in Kenya.²³³ Drawing from the TWAIL perspective of looking at the past to understand the present, the rest of this part engages in a historical overview of the development of plant variety protection in Kenya to tease out the factors and actors that influenced it to design a UPOV 1991 Convention-compliant plant variety protection system.

4.3.1. Kenya: Seed Companies

Kenya became a UPOV member on 13 May 1999, after it acceded to its 1978 Convention.²³⁴ However, it had enacted a Seeds and Plant Varieties Protection Act (SVPA) in 1972, which entered into force in 1975. By the time the WTO was established in 1995, Kenya was one of the few Global South countries that had a plant variety protection system.²³⁵ Kenya further revised the SVPA in 2012 to conform with the UPOV 1991 Convention; it became party to the UPOV 1991 Convention on 11 May 2016.²³⁶ As highlighted above, Kenya is actively involved in debates about plant variety protection at the TRIPS Council. At the TRIPS Council, Kenya boldly advocates for a full review of Article 27.3(b) of TRIPS by drawing attention to the connection between IPRs, biodiversity, farmers' rights, and traditional knowledge.²³⁷ In fact, Kenya recommends the African Model Law as a useful guideline for designing *sui generis* plant variety protection systems.²³⁸ However, contrary to Kenya's position at the TRIPS Council, its SVPA 2012 is

²³³ Kenya acceded to the ITPGRFA in July 2003; it entered into force in June 2004. Constitution of Kenya (2010), s 11.3(b).

²³⁴ UPOV, 'Members of the International Convention' (n 141).

²³⁵ Kenya, South Africa and Zimbabwe were the only African countries that had plant variety protection systems prior to TRIPS.

²³⁶ UPOV, 'Members of the International Convention' (n 141).

²³⁷ WTO, 'Communication from Kenya on Behalf of the African Group, Review of Provisions of Article 27.3(b)' (n 2); WTO, *Council for Trade-Related Aspects of Intellectual Property Rights – Minutes of the Meeting Held in the Centre William Rappard on 7-8 July 1999* (IP/C/M/24, 17 August 1999); WTO, *Council for Trade-Related Aspects of Intellectual Property Rights – Minutes of Meetings Held in the Centre William Rappard on 21-22 September 2000* (IP/C/M/28, 23 November 2000); WTO, *Council for Trade-Related Aspects of Intellectual Property Rights – Minutes of Meeting Held in the Centre William Rappard on 5-7 March 2002* (IP/C/M/35, 22 March 2002) (*Council for Trade-Related Aspects of Intellectual Property Rights 2002*).

²³⁸ WTO, *Council for Trade-Related Aspects of Intellectual Property Rights 2002* (n 237) para 240, 61.

modelled after the UPOV 1991 Convention, which contradicts the African Model Law. Nonetheless, one notable feature of Kenya's plant variety protection architecture derived from the African position is that it prohibits patents for plant varieties.²³⁹

Pre-TRIPS

Kenya's historic links with Britain, leading to foreign interest in its horticulture and floriculture sector, exposed it to pressures to institute a national plant variety protection system.²⁴⁰ The growth of the horticulture sector in Kenya is traceable to the early 20th century when Kenya became a British colony.²⁴¹ Commercial horticultural production started with the Imperial British East African Company's experiments with temperate fruits around 1893.²⁴² After Kenya's independence in 1963, the Horticultural Crop Development Agency (HCDA) established in 1967 desired to develop the horticultural sector.²⁴³ Multinational corporations such as Del Monte resumed operation in Kenya in 1968, which led to the exportation of horticultural products.²⁴⁴ Exportation of horticultural products grew from about 3 per cent of the total agricultural exports in 1974 to 14 per cent by 1990.²⁴⁵ Kenya is also a leading exporter of rose cut flowers to the EU, with a market share of 38

²³⁹ Section 26 of the Industrial Property Act 2001 provides that plant varieties regulated under the Seeds and Plant Varieties Act are not patentable. Notwithstanding, parts of the plant or plant biotechnological processes or inventions may be patentable.

²⁴⁰ Graham Dutfield, *Intellectual Property, Biogenetic Resources and Traditional Knowledge* (n 45) 213-14; N P Louwaars, R Trip, D Eaton, V Henson-Apollonio, R Hu, M Mendoza, F Muhhuku, S Pal, and J Wekundah, 'Impacts of Strengthened Intellectual Property Rights Regimes on the Plant Breeding Industry in Developing Countries: A Synthesis of Five Case Studies' (A Study Commissioned by the World Bank, February 2005) 68 ('Impacts of Strengthened Intellectual Property Rights Regimes on the Plant Breeding Industry in Developing Countries').

²⁴¹ Kenya became a protectorate of Great Britain in 1895, and a British colony in 1920.

²⁴² Mervyn F Hills, *Cream Country: The Story of the Kenya Co-operative Creameries Limited* (KCC Nairobi 1956); Nicholas Minot and Margaret Ngigi, *Are Horticultural Exports a Replicable Success Story? Evidence from Kenya and Cote d'Ivoire* (International Food Policy Research Institute 2004) 5-6 (*Are Horticultural Exports a Replicable Success Story?*).

²⁴³ Minot and Ngigi, *Are Horticultural Exports a Replicable Success Story?* (n 242).

²⁴⁴ Steven Jaffee, 'The Many Faces of Success: The Development of Kenyan Horticultural Exports' in Steven Jaffee and John Morton (eds), *Marketing Africa's High-Value Foods: Comparative Experiences of an Emergent Private Sector* (World Bank 1995) 343-70.

²⁴⁵ Minot and Ngigi, *Are Horticultural Exports a Replicable Success Story?* (n 242).

per cent.²⁴⁶ The predominantly foreign-owned floriculture and horticulture companies along with the HCDA lobbied for a national plant variety protection system.²⁴⁷ While Britain did not introduce a plant variety protection system in Kenya during the colonial period, the SVPA enacted in 1972 was modelled on the United Kingdom's Plant Varieties and Seeds Act 1964. Indeed, the absence of a plant variety protection system in Kenya during the colonial period is unsurprising, as Britain itself only introduced a national plant variety protection system in 1964, which was one year after Kenya had gained independence. Nonetheless, Britain provided technical and legal support for the construction of the SVPA.²⁴⁸

During TRIPS Negotiations (1986-1994)

While the TRIPS negotiations were ongoing from 1986 to 1994, there were significant changes in Kenya's seed sector which had an impact on the SVPA. To start with, the World Bank and FAO-sponsored establishment of seed systems around Africa in the early 1990s highlighted in Chapter 2 was also evident in Kenya in the early 1990s.²⁴⁹ In particular, Kenya occupied a significant position in the seed industry relations in Africa. The Seed Trade Association of Kenya (STAK), established in 1982, is the headquarters for the African Seed Trade Association.²⁵⁰ Thus, STAK is a channel for promoting international and regional cooperation as it is a member of the International Seed Federation, as well as a regional site for discussions about seed trade. STAK was actively involved in

²⁴⁶ Kenya Flower Council, *Floriculture in Kenya* <http://kenyaflowercouncil.org/?page_id=92> accessed 12 December 2016. The major cut flowers grown in Kenya are roses, carnations, chrysanthemum, and alstromeria. It is also growing other varieties of flowers including lilies, eryngiums, gypsophilla, arabicum, hypericum, and statice.

²⁴⁷ Louwaars and others, 'Impacts of Strengthened Intellectual Property Rights Regimes on the Plant Breeding Industry in Developing Countries' (n 240) 68; Rangnekar, 'Geneva Rhetoric, National Realities' (n 232) 13. On the floriculture industry in Kenya, see generally, Maurice Ochieng Bolo, *Learning and Innovation in Agri-Export Industries: Partnerships, Institutions and Capabilities in Kenya's Flower Industry* (Lap Lambert Academic Publishing 2012).

²⁴⁸ Dwijen Rangnekar, *Assessing the economic implications of different models for implementing the requirements to protect plant varieties: A case study of Kenya* (Impacts of the IPR Rules on Sustainable Development 'IPDEV', November 2006) 21-22.

²⁴⁹ See Chapter 2 for discussion on the introduction of seed laws in Nigeria. See also GRAIN, 'Africa's Seed Laws: Red Carpet for Corporations' (Seedling, July 2005) <<https://www.grain.org/article/entries/540-africa-s-seeds-laws-red-carpet-for-corporations>> accessed 14 June 2017.

²⁵⁰ Seed Trade Association of Kenya (STAK) <<https://www.stak.or.ke/>> accessed 15 January 2017.

organising and hosting national and regional conferences with key international actors such as UPOV during the TRIPS negotiations period. In fact, UPOV co-hosted a seminar in Kenya in 1993 which led to the establishment of the Plant Breeders Association of Kenya (PBAK).²⁵¹ PBAK lobbies, along with a National Food Policy adopted by the Kenyan government in 1993, triggered the enactment of the Seeds and Plant Varieties (Plant Breeders' Rights) Regulations in 1994.²⁵² While the SVPA was enacted in 1972, the Regulations for administering it was only enacted in 1994. Importantly, by the time TRIPS entered into force on 1 January 1995, Kenya had an operational plant variety protection law and regulation which fulfilled the obligation in Article 27.3(b) of TRIPS.²⁵³

Post-TRIPS

Although the SVPA already fulfilled Kenya's obligation to protect varieties under TRIPS, plant breeders pressed Kenyan lawmakers to amend the SVPA in line with the UPOV 1991 Convention.²⁵⁴ As highlighted above, UPOV held a seminar in Kenya in 1993 which opened up Kenya's engagement with the UPOV office. However, Kenya started formal accession talks with UPOV only in 1996. Other factors that cemented the idea of reforming the SVPA in line with the UPOV 1991 Convention included the visit of Kenyan regulators to the US Plant Variety Office in 1997 and a workshop organised by PBAK in 1998 which had the Commissioner

²⁵¹ 'Seminar on the Nature of and Rationale for the Protection of Plant Varieties under the UPOV Convention, Nairobi, Kenya, 28-29 May 1993' (UPOV 1994) <http://www.upov.int/edocs/pubdocs/en/upov_pub_737.pdf> accessed 5 January 2017; Rangnekar, 'Geneva Rhetoric, National Realities' (n 232) 14.

²⁵² The national food policy was published in the Official Kenya Gazette Supplement No 73 of 25 November 1994. Rangnekar, 'Geneva Rhetoric, National Realities' (n 232) 14; Peter Munyi, 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' (2015) 18(1-2) *The Journal of World Intellectual Property* 65, 69 ('Plant Variety Protection Regime in Relation to Relevant International Obligations').

²⁵³ However, the Kenya Plant Health Inspectorate Service (KEPHIS) was established in 1996 as the competent authority to regulate and administer plant variety rights. KEPHIS is responsible for receiving PVP applications in Kenya. It was established by a Presidential Order as a State Corporation. See Kenya Plant Health Inspectorate Service Order 1996 (Legal Notice No 305 of 1996). KEPHIS was re-established by a statute in 2012, the Kenya Plant Health Inspectorate Service Act (No 54 of 2012).

²⁵⁴ Rangnekar, 'Geneva Rhetoric, National Realities' (n 232) 17.

of New Zealand's Plant Variety Rights Office in attendance.²⁵⁵ At both events, the Kenyan law and policy-makers were apprised of the benefits of acceding to the UPOV 1991 Convention. Recall that OAU/STRC meetings were also held in 1996 and 1997, and in fact, Kenya co-hosted the 1997 meeting.²⁵⁶

As such, by the late 1990s, there were conflicting plant variety protection ideas circulating in Kenya: pro-UPOV 1991 Convention and Pro-African Model Law ideas. Johnson Ekpere sheds light on the Kenyan situation vis-à-vis the African Model. Ekpere explains that:

One of the major headaches for us [OAU/STRC] during discussions leading up to African Model Law was that participants from Kenya were not stable. We had representatives from different ministries attending – ministry of agriculture, trade or environment...²⁵⁷

This provides insights regarding the divergences between Kenya's regional or international submissions and its law-making process at home. Simply put, there were different actors involved, and no overarching strategy to harmonise the divergent positions or outcomes.

Apart from the plant breeders' push for SVPA reforms, the revision of the Kenyan Constitution in 2010 also contributed to the plant variety protection reforms.²⁵⁸ Article 11.3(b) of the Kenyan Constitution 2010 provides for the Kenyan Parliament to 'recognise and protect the ownership of indigenous seeds and plant varieties, their genetic and diverse characteristics and their use by the communities of Kenya.' This provision recognises the importance of farmers' indigenous seeds

²⁵⁵ UPOV, 'Council: Thirty-First Ordinary Session, Geneva, 29 October 1997 (C/31/17, 28 October 1998) Annex IV, 26 <http://www.upov.int/edocs/mdocs/upov/en/c_31/c_31_17.pdf> accessed 5 December 2016; UPOV, 'Council: Thirty-Second Ordinary Session, Geneva, 28 October 1998 (C/32/16, 18 July 2000) Annex III, 17 and 30 <http://www.upov.int/edocs/mdocs/upov/en/c_32/c_32_16.pdf> accessed 5 December 2016.

²⁵⁶ See 4.1 above.

²⁵⁷ The author's personal communication with Johnson Ekpere (January 2017).

²⁵⁸ Munyi, 'Plant Variety Protection Regime in Relation to Relevant International Obligations' (n 252) 69.

and varieties to farming in Kenya. However, as discussed in Chapter 3, indigenous seeds and plant varieties cannot fulfil the DUS conditions for protection under a UPOV 1991 Convention-compliant plant breeder's rights system. To reconcile its plant breeders' calls for SVPA reforms with the constitutional provision for the protection of indigenous seeds and plant varieties, the SVPA 2012 created the National Plant Genetic Resources Centre (NPGRC) to govern the protection of indigenous seeds and plant varieties as mandated by the Constitution.²⁵⁹ Nonetheless, since the SVPA complies with the UPOV 1991 Convention provisions and merely signposts applicants to the NPGRC, the UPOV office approved the revised SVPA. Kenya deposited its instrument of accession to the UPOV 1991 Convention on 11 April 2016; it became party to the UPOV 1991 Convention on 11 May 2016.²⁶⁰

The next section provides a brief overview of the SVPA 2012. This simply outlines the coverage of the law, conditions for protection, and scope of protection under the SVPA 2012.²⁶¹ It does not substantially discuss these provisions as the aim of this part is to uncover how and why Kenya joined UPOV.

4.3.2. Kenya: Seeds and Plant Varieties Protection Act 2012

In line with the UPOV 1991 Convention, the SVPA 2012 provides that plant breeder's rights *may* be granted for varieties of all plant genera and species.²⁶² However, the SVPA deviates from UPOV, as this provision is discretionary. To qualify for protection, the varieties are required to meet the DUS conditions under UPOV.²⁶³ Plant breeders' rights are generally granted for 20 years for plants, and 25 years for vines and trees.²⁶⁴ With these rights, plant breeders can exclusively

²⁵⁹ Seeds and Plant Varieties Protection Act (rev edn 2012) (SVPA 2012), s 27A (1).

²⁶⁰ UPOV, 'Accession of Kenya to the 1991 Act of the International Convention for the Protection of New Varieties of Plants' (UPOV Press Release 105, Geneva, 11 April 2016) <http://www.upov.int/edocs/pressdocs/en/upov_pr_105.pdf> accessed 5 December 2016.

²⁶¹ For discussions on the SVPA 2012, see for example, Munyi, 'Plant Variety Protection Regime in Relation to Relevant International Obligations' (n 252).

²⁶² Emphasis added, SVPA 2012, s 17.

²⁶³ SVPA 2012, s 18.

²⁶⁴ SVPA 2012, s 19.

produce or reproduce, condition for propagation, offer for sale, sell or market, export, import, or stock the protected varieties for any of the above purposes.²⁶⁵ Plant breeder's rights are also extended to harvested materials and products and essentially derived varieties as defined under the UPOV 1991 Convention.²⁶⁶

Also, similar to the UPOV 1991 Convention, the SVPA prioritises breeder's rights over small-scale farmers' interests. It provides that 'within reasonable limits and subject to the safeguarding of the legitimate interests of the breeder, farmers may use the product of the harvest which they have obtained by planting, on their own holdings, the protected variety.'²⁶⁷ In essence, under the SVPA 2012, farmers are explicitly allowed to save and reuse saved products of harvests from protected varieties only on their own holdings or farms. As such, farmers are prohibited from exchanging or selling farm-saved seeds. Yet, as Peter Munyi points out, 'these practices [saving, re-using, exchanging and selling farm-saved seeds] are engrained in the smallholder farmer systems in Kenya.'²⁶⁸

While the SVPA 2012 does not provide for access and benefit sharing principles as set out under the CBD, Kenya has a separate legal framework for this: the Environmental Management and Co-ordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources, and Benefit Sharing) Regulations 2006 (EMCR).²⁶⁹ The EMCRC provides that access to genetic resources in Kenya is subject to an access permit and it provides a benefit sharing structure.²⁷⁰ Furthermore, the focal point for farmers' rights principles under the ITPGRFA is the Genetic Resources Research Institute (GeRRI) established under the Kenya Agricultural and Livestock Research Act 2013 of the Ministry of Agriculture Livestock Fisheries (MOALF). However, a Kenyan report on its National Strategy

²⁶⁵ SVPA 2012, s 20.

²⁶⁶ See discussion on UPOV in Chapter 3.

²⁶⁷ SVPA 2012, s 20(IE).

²⁶⁸ Munyi, 'Plant Variety Protection Regime in Relation to Relevant International Obligations' (n 252) 74.

²⁶⁹ Environmental Management and Co-ordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations 2006 <<https://www.cbd.int/doc/measures/abs/msr-abs-ke2-en.pdf>> accessed 5 January 2017 (EMCR).

²⁷⁰ EMCRC, pts III and IV.

on Genetic Resources notes that the ITPGRFA ‘has not been domesticated due to lack of national policies and legal frameworks.’²⁷¹ Furthermore, the report points out that Kenya has poor institutional structures, overlapping mandates, and lack of clear institutional policies on access to genetic resources.²⁷²

What is clear from the above is that although the Kenyan Constitution recognises the importance of small-scale farmers’ and indigenous varieties, the SVPA 2012 adopts the UPOV 1991 Convention plant breeder’s rights system. Since the SVPA focuses mainly on plant breeder’s rights provisions, Kenya attempts to implement the other constitutional provisions on indigenous varieties, as well as farmers’ rights and access and benefit sharing principles, in alternative legislations and institutions such as the NPGRC, EMCR, and GeRRI. However, as highlighted in 4.1 above, what this creates is a fragmentation of national legislations and institutions covering one subject matter, which may be challenging to co-ordinate. Indeed, traces of the lack of co-ordination among the national institutions in Kenya is glimpsed from the differences between its national law-making process and its regional or international submissions. It was principally for this reason that the African Model Law was designed. The drafters of the African Model Law sought to guide African countries in designing comprehensive national legislations that fulfilled conflicting international obligations concerning plant variety protection.

4.4. Conclusion

This chapter contributes to the explanation on the variations in plant variety protection systems in the Global South by analysing the proliferation of the UPOV 1991 Convention in Africa. This is important to the central focus of this thesis, which is plant variety protection in Nigeria, because Nigeria has pending obligations under TRIPS to protect plant varieties, yet it currently does not have a plant variety protection system. Furthermore, Nigeria is a member of the African

²⁷¹ ITPGRFA, *Kenya National Strategy on Genetic Resources within the Context of Climate Change 2016-2020* (Genetic Resources Research Institute 2015) 21.

²⁷² *ibid* 20.

Group at the WTO. Thus, understanding why there is a proliferation of the UPOV 1991 Convention plant breeder's rights system within Africa, despite the African Group's rejection of this 'commercial breeders' focused system at the TRIPS Council provides valuable lessons for Nigeria.

Using the TWAIL lens, the chapter pays attention to the attempts to implement TRIPS in Africa in ways that protect small-scale farmers' interests. The chapter has shown that African countries designed the African Model Law as a comprehensive *sui generis* template or guideline to cater to the small-scale centred farming practices prevalent within Africa. The African Model Law signified the continent's common position in forums such as the TRIPS Council and the United Nations (UN). Yet, the developments at the national level reveal the disregard for the African Model Law within the continent. For example, in the process of translating the African Model Law from English to French, OAPI designed a UPOV 1991 Convention-compliant plant breeder's rights system. Furthermore, Kenya boldly presented the African Group's position at the TRIPS Council where it advocated for the African Model Law as a creative *sui generis* guideline for plant variety protection, yet it had a UPOV-styled plant variety protection system. Kenya also subsequently acceded to the UPOV 1991 Convention.

The combination of the TWAIL with the regime complex theory lens (insights from actors' strategies where there are overlapping treaties covering one subject matter such as trade agreements) has shown that trade and investment agreements, regional associations, pressure from seed companies, and UPOV office lobbies have contributed to the proliferation of the UPOV 1991 Convention within Africa. There are currently five African states and one regional intergovernmental organisation – namely Kenya, Tanzania, Tunisia, Morocco, South Africa, and OAPI – that are UPOV members. Two other regional intergovernmental organisations – ARIPO and SADC – have initiated the process of acceding to the UPOV 1991 Convention. ARIPO and SADC's accession to the UPOV 1991 Convention would mean that in addition to OAPI (which is already a UPOV member), 44 of the 54 African countries – which is about 80 percent of Africa –

would be party to UPOV. These findings helps to answer the subsidiary research question posed in this thesis concerning the factors that influence plant variety protection law-making in the Global South. In addition, this is important to Nigeria because it draws attention to the growing UPOV-plant breeders' rights trend in the African countries around it.

The next chapter explores how India and Thailand, which aligned with the African Group at the TRIPS Council, have translated the Global South creative *sui generis* plant variety protection system aspiration into domestic legal architecture. This also provides useful lessons for Nigeria because it shows that Global South countries can actually introduce the *sui generis* systems they advocate for at the international and global forums. To explain how and why India and Thailand successfully introduced their creatively designed *sui generis* systems, the next chapter highlights the role of CSOs in the plant variety protection law-making process. India and Thailand faced pressures similar to those faced by the African countries as discussed in this chapter. However, the TWAIL lens applied in the analysis shows that one of the key contributors to the difference in the eventual plant variety protection system in India and Thailand was the vibrant interventions of CSOs. The findings from the next chapter is important for Nigeria because it further contributes to the explanation of the factors that influence the variations in plant variety protection systems in the Global South.

Chapter 5

Creative *Sui Generis* Systems: Lessons from India and Thailand

Unlike 80 per cent of Africa leaning towards the UPOV as seen in the preceding chapter, India and Thailand are examples of Global South WTO members that have designed creative *sui generis* systems. The Indian and Thai examples are important for this thesis because they provide further insights into the factors that influence the variations in plant variety protection systems in the Global South. Thus, the findings from this chapter contribute to answering the subsidiary research question. Knowing that Global South WTO members have developed successful counter-narratives and have introduced creative *sui generis* plant variety protection systems clearly demonstrates that the Global South common position at the TRIPS Council is translatable into domestic legal architecture. The Indian and Thai examples further demonstrate the creative utilisation of the latitude under Article 27.3(b) of TRIPS.

India and Thailand's creative *sui generis* plant variety protection systems provide useful examples for Nigeria for three reasons. First, India, Thailand, and Nigeria have similar preferences for a creative *sui generis* plant variety protection system at the TRIPS Council. Second, India, Thailand, and Nigeria have similar agricultural sectors, particularly the prevalence of small-scale farmers who save, reuse, exchange, and sell farm-saved seed. Third, India, Thailand, and Nigeria are ethnically diverse Global South countries with similar challenges in domestic law-making, including the existence of various institutions and actors with conflicting interests relevant to plant variety protection. Furthermore, India and Nigeria share a colonial past; both countries were colonised by Britain. Although Thailand was never colonised, it has experienced bouts of political instability including military coup d'états, similar to Nigeria.

Consequently, this chapter investigates how India and Thailand navigated through the regime complex for plant variety protection and the political economy of law-

making to translate their preference for a *sui generis* system into national plant variety protection systems.¹ In line with this, the chapter is broadly concerned with two issues: the plant variety protection law-making in each country and the substantive plant variety protection laws. The chapter argues that the vibrant civil society organisations (CSOs) in India and Thailand were instrumental in advocating for their creative *sui generis* systems. Indian and Thai CSOs successfully circulated ideas about farmers' and community rights to project the voices and interests of small-scale farmers, which reflects Balakrishnan Rajagopal's TWAIL call to pay attention to reforms to international law from social movements.² This is important because it provides lessons to Nigeria – and other Global South WTO members – on how CSOs can influence and shape plant variety protection law-making and laws.

As will be seen, while pro-plant breeders' rights proponents circulated ideas through seminars and workshops in India and Thailand, the pro-farmers' rights movement equally circulated ideas through seminars, workshops, rallies, protests, and media campaigns. Indeed, the pro-farmers' rights activists demystified the plant variety protection discourse, transforming it from an esoteric trade specialist's subject to a grassroots political movement. Put differently, the farmers' rights activists created awareness about how the plant variety protection system could affect small-scale farming practices, thus raising the public's consciousness about the debates. Unlike the African examples in the previous chapter, the vibrant CSO presence in India and Thailand resisted their governments' attempts to introduce bilateral trade agreements that required them to join the UPOV 1991 Convention. For example, CSOs in Thailand protested against the government's attempt to sign bilateral trade agreements with the United States (US) and

¹ For regime complex of plant variety protection, see for example: Kal Raustiala and David Victor, 'The Regime Complex for Plant Genetic Resources' (2004) 58(2) *International Organizations* 277, 279. See also discussions on regime complex in Chapter 1.

² Balakrishnan Rajagopal, 'International Law and Social Movements: Challenges to Theorizing Resistance' (2002-2003) 41 *Columbia Journal of Transnational Law* 397, 400 ('International Law and Social Movements').

European Union (EU), which both required Thailand to join the UPOV 1991 Convention.³

The chapter is broadly divided into two parts. The first focuses on India, the second on Thailand. Each part consists of an overview on farming practices and three sections. Section 1 examines the historical evolution of plant variety protection, which is divided into pre-TRIPS, during TRIPS negotiations, and post-TRIPS developments. Section 2 unpacks the substantive plant variety protection systems. Section 3 discusses further attempts to join UPOV despite the introduction of creative *sui generis* systems.

5.1. Plant Variety Protection: India

Agriculture is key to India's economy, with 51.6 per cent of its labour force employed in the agricultural sector.⁴ In 2016, agriculture accounted for about 17.3 per cent of India's GDP.⁵ The key crops grown in India are rice, wheat, and maize.⁶ In fact, India is the world's largest rice exporter.⁷ As at 2016, India had a population of about 1.324 billion people; over 65 per cent of this population live in rural areas and depend on the agricultural sector for their livelihood.⁸ Administratively, India is divided into 29 states, seven union territories – including the National Capital Territory of Delhi – and over 600,000 villages. Like in Nigeria and other Global

³ This is discussed in 5.2.3 below.

⁴ The World Bank, 'Employment in Agriculture (% of total employment)' (2010) <<http://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=IN>> accessed 25 August 2017.

⁵ The World Bank, 'Agriculture, Value Added: % of GDP' (2016) <<http://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=IN>> accessed 28 August 2017.

⁶ The World Bank, 'India: Issues and Priorities for Agriculture' (17 May 2012) <<http://www.worldbank.org/en/news/feature/2012/05/17/india-agriculture-issues-priorities>> accessed 25 August 2017; Government of India, *Economy Survey 2016-17: Agriculture and Food Management* (Government of India, Ministry of Finance, Department of Economic Affairs, Economic Division, August 2017) 166 (*Economy Survey 2016-17*) <<http://indiabudget.nic.in/es2016-17/eprefaceVol2.pdf>> accessed 25 August 2017.

⁷ United States (US) Department of Agriculture – Foreign Agriculture Service, 'Rice: World Markets and Trade' (August 2017) <<https://apps.fas.usda.gov/psdonline/circulars/grain-rice.pdf>> accessed 23 August 2017.

⁸ Food and Agriculture Organisation of the United Nations (FAO), *India-FAOSTAT* <<http://www.fao.org/faostat/en/#country/100>> accessed 23 August 2017; The World Bank Group, 'Population, Total' <<http://data.worldbank.org/indicator/SP.POP.TOTL?locations=IN>> accessed 23 August 2017.

South countries, small-scale farmers – farmers with less than two hectares – account for over 70 per cent of the farming population in India.⁹ These small-scale farmers are significant actors in the agriculture sector, as they produce over 80 per cent of India's annual seed requirements.¹⁰ Thus, policy interventions as well as CSOs such as Gene Campaign consistently emphasise the importance of preserving farmers' traditional practice of saving, selecting, and reusing seeds.¹¹ Indeed, farmers' traditional practices of saving seeds and selective re-sowing has contributed to the preservation of plant varieties, such as the medicinal rice variety known as *Navara* found in Kerala, South India.¹²

In addition to small-scale farmers as highlighted above, public research institutions and private seed companies are also key players in the Indian agriculture sector. The Indian Council for Agricultural Research (ICAR), established in 1929, coordinates agricultural research and education in India.¹³ The ICAR institutions,

⁹ Government of India, *Economy Survey 2016-17: Agriculture and Food Management* (n 6) 167; N P Louwaars, R Tripp, D Eaton, V Henson-Apollonio, R Hu, M Mendoza, F Muhhuku, S Pal and J Wekundah, 'Impacts of Strengthened Intellectual Property Rights Regimes on the Plant Breeding Industry in Developing Countries: A Synthesis of Five Case Studies' (Report Commissioned by the World Bank, February 2005) 48

<https://www.iprsonline.org/resources/docs/LouwaarsCGN_Plants_05.pdf> accessed 28 June 2017; Ramesh Chand, P A Lakshmi Prasanna, and Aruna Singh, 'Farm Size and Productivity: Understanding the Strengths of Smallholders and Improving their Livelihoods' (25 June 2011) XLVI 26 and 27 *Economic and Political Weekly* 5, 6-7; see also Chapter 2 for details on small-scale farmers' seed sources and the informal seed sector in Nigeria.

¹⁰ Suman Sahai, 'India's Plant Variety Protection and Farmers' Rights Act, 2001' (10 February 2003) 84(3) *Current Science* 407, 409. However, it is important to note that this percentage varies depending on the crop.

¹¹ See for example, Louwaars and others, 'Impacts of Strengthened Intellectual Property Rights Regimes on the Plant Breeding Industry in Developing Countries' (n 9) 131; Dwijen Rangnekar, *Assessing the Economic Implications of Different Models for Implementing the Requirements to Protect Plant Varieties: A Case Study of India* (Impacts of the IPR Rules on Sustainable Development 'IPDEV' 2006); Anitha Ramanna, *Farmers Rights in India: A Case Study* (The Fridtjof Nansen Institute, May 2006); Gene Campaign, 'Advocacy to Protect Farmers Rights' <<http://genecampaign.org/farmers-rights/>> accessed 25 August 2017.

¹² The Indian Protection of Plant Varieties and Farmers Rights Authority, which is responsible for regulating the registration of plant varieties in India, established a Plant Genome Saviour Community Award to recognise and celebrate farmers engaged in the conservation of genetic resources. Shri P Narayanan Unny of Navara Eco Farm was awarded the Plant Genome Farmer Recognition in February 2009 for preserving the Navara variety. The Authority grants a maximum of 20 recognitions a year. See list of awardees here: Plant Genome Saviour Farmer Recognition <<http://www.plantauthority.gov.in/PGSFRCG.htm>> accessed 19 August 2017. For more on the Navara, see Unnys Navara Eco Farm, *About Navara* <http://navara.in/about_navara> accessed 19 August 2017.

¹³ Indian Council of Agricultural Research (ICAR) <<http://www.icar.org.in/en/aboutus.htm>> accessed 19 August 2017.

consisting of a network of 101 research institutes and 71 agricultural universities, undertakes public sector agricultural research and plant breeding along with State Agricultural Universities (SAUs).¹⁴ Although private seed companies' involvement in the Indian agriculture sector (which started in 1912 with the establishment of Sutton and Sons) has a longer history than the ICAR, the earliest seed companies were mainly involved in importing vegetable and flower seeds from European countries.¹⁵ As will be seen below, it was the seed policy reforms in the 1980s which spurred private sector plant breeding and opened up India to multinational seed companies. There are currently about 400 to 500 private national and multinational seed companies engaged in seed production and marketing in India.¹⁶

Therefore, farmers, public institutions, and private seed companies all play significant roles in the Indian seed sector.¹⁷ Farmers have traditionally been the main actors involved in saving and selecting seeds with specific traits to produce varieties suited to their requirements and local conditions.¹⁸ The public institutions focus on seed development, production, and distribution of low value crops such as wheat, paddy rice, as well as other cereals, pulses, and oilseeds, while the private sector plays a leading role in high value crops such as vegetables, flowers, horticultural crops, hybrids, and genetically modified crops.¹⁹ However, the Indian Seed Policy 2002 promoted private sector involvement in the production and marketing of all crops, including low value crops.²⁰

¹⁴ ICAR, 'ICAR Institutions, Deemed Universities, National Research Centres, National Bureaux and Directorate/Project Directorates' <<http://www.icar.org.in/en/node/325>> accessed 19 August 2017; Mrinalini Kochupillai, *Promoting Sustainable Innovations in Plant Varieties* (Springer 2016) 97.

¹⁵ Gurdev Singh, S R Asokan and V N Asopa, *Seed Industry in India: A Management Perspective* (Oxford and IBH Publishing Co 1990) 6; Niranjana Rao, 'Indian Seed System and Plant Variety Protection' (21-27 February 2004) 39(8) *Economic and Political Weekly* 845, 847.

¹⁶ Seednet India Portal, 'Indian Seed Sector: Role of Public and Private Seed Sector' <<http://seednet.gov.in/Material/IndianSeedSector.htm>> accessed 24 August 2017.

¹⁷ Philippe Cullet, 'Revision of the TRIPS Agreement Concerning the Protection of Plant Varieties: Lessons from India Concerning the Development of a Sui Generis System' (1999) 2 *Journal of World Intellectual Property* 617, 631.

¹⁸ *ibid.*

¹⁹ *ibid.*; National Seed Plan.

²⁰ Indian National Seeds Policy 2002.

5.1.1 Historical Evolution of Plant Variety Protection in India

Pre-TRIPS

During the colonial period – from 1858 to 1947 – the British colonial administrators established a system of testing new varieties by multiplying small amounts of those varieties on farms.²¹ These new varieties were distributed through extension systems.²² However, a plant variety protection system was not introduced during this period. The first legal developments in India's seed sector started in the 1960s, after the establishment of a National Seeds Corporation (NSC) placed under the administrative control of the Federal Ministry of Agriculture in 1963.²³ In 1966, about two decades post-independence, the Indian government passed its first seed law: the Seeds Act of 1966.²⁴ The Indian government also enacted an Industrial Policy Act in 1969 which prohibited large companies – companies with more than INR 1 billion in assets – from doing business in the seed industry.²⁵ Similarly, in 1979, companies with over 40 per cent foreign ownership were banned from doing business in the seed industry.²⁶ In addition, commercial importation of agricultural input (including seeds) produced in India was banned, while exportation of seeds was restricted.²⁷

Accordingly, the formal production and distribution of seeds was controlled by government agencies, the primary ones being the NSC and the State Farm Corporation of India (SFCI).²⁸ Suresh Pal and Robert Tripp point out that in line

²¹ Carl Pray and Bharat Ramaswani, 'Liberalization's Impact on the Indian Seed Industry: Competition, Research and Impact on Farmers' (2001) 2(3/4) International Food and Agribusiness Management Review 407, 409 ('Liberalization's Impact on the Indian Seed Industry').

²² *ibid.*

²³ National Seeds Corporation Limited: A Government of India Undertaking – 'Mini Ratna' Company <<http://www.indiaseeds.com/>> accessed 12 August 2017.

²⁴ Seeds Act 1966, Act No 54 of 1966.

²⁵ Pray and Ramaswani, 'Liberalization's Impact on the Indian Seed Industry' (n 21) 409.

²⁶ Large Indian firms were firms with more than INR 1 billion or about USD 133 million in assets. Pray and Ramaswani, 'Liberalization's Impact on the Indian Seed Industry' (n 21) 409.

²⁷ *ibid.*

²⁸ Jagjit Kaur Plahe, 'TRIPS Downhill: India's Plant Variety Protection System and Implications for Small Farmers' (2011) 41(1) Journal of Contemporary Asia 75, 77 ('TRIPS Downhill').

with India's seed policy, the aforementioned government agencies (NSC and SFCI) pursued the twin goals of (i) efficiency, that is, serving market-oriented large farmers, and (ii) equity, that is, serving small farmers and marginal areas.²⁹ The outcome of the research conducted by the government agencies and its associated institutions were in the public domain, and could not be monopolised using intellectual property rights (IPRs). Jagjit Kaur Plahe explains that it was partly due to the public sector's predominant role in plant breeding that the Indian government did not introduce plant variety protection systems.³⁰

Meanwhile, the Indian government initiated a National Seeds Project (NSP) funded by the World Bank from 1976 to 1985.³¹ The NSP was introduced to provide high yielding varieties (HYVs), otherwise called Green Revolution varieties for farmers. However, farmers' demand for HYVs was low. According to Devinder Sharma, one of the reasons raised for this low demand was the 'inefficiency of the public sector' in disseminating the seeds of the HYVs to farmers.³² Sharma argues that in reality, there was a low demand for the HYVs because these varieties were not required in the first place.³³ As will be seen below, the 'inefficiency of the public sector' was used as a justification for the subsequent changes in laws and policies to promote 'efficient' private sector participation in the seed industry. Interestingly, rather than end the NSPs, both the Indian government and World Bank continued to promote the production and dissemination of the HYVs.³⁴

One specific mention of plant variety protection in India's domestic legal architecture during the pre-TRIPS period was in the Indian Patents Act 1970,

²⁹ Suresh Pal and Robert Tripp, 'India's Seed Industry Reforms: Prospects and Issues' (2002) 57(3) *Indian Journal of Agricultural Economics* 443, 443.

³⁰ Plahe, 'TRIPS Downhill' (n 28) 77.

³¹ The World Bank, 'Project Completion Report, India: National Seeds I & II Projects (Loan 1273-IN and Credit 816-IN)' (Report No 6836, 15 June 1987) (*Project Completion Report, India*) <<http://documents.worldbank.org/curated/en/654461468258301314/pdf/multi-page.pdf>> accessed 12 August 2017.

³² GRAIN with Devinder Sharma, 'India's New Seed Bill' (July 2005) ('India's New Seed Bill') <<https://www.grain.org/es/article/entries/457-india-s-new-seed-bill>> accessed 12 August 2017.

³³ *ibid.*

³⁴ *ibid.*

which was India's first post-colonial patent law.³⁵ Similar to the Nigerian Patents and Designs Act which was also enacted in 1970, Section 3 of the Indian Patents Act prohibited patents for plant varieties.³⁶ Also similar to Nigeria, India was a member of the Model Law Committee of Experts invited by the United Bureaux for the Protection of Intellectual Property Law (BIRPI) to review the BIRPI Model Law for Industrially Less Developed Countries.³⁷ As discussed in Chapter 2, the BIRPI Model Law prohibited patents for plant varieties, which could have inspired or contributed to the similar prohibitions in India.³⁸

During TRIPS Negotiations (1986-1994)

Although discussions about plant variety protection came to public attention only in the final phases of the TRIPS negotiations, as will be seen below, initiatives to introduce a plant variety protection system in India commenced much earlier. By the late 1980s, India had reformed both its industrial policies and seed laws. With these reforms, India changed its regulations on seed imports as well as the barriers to entry into the seed sector for large Indian companies and foreign firms. In particular, the Indian government reversed its prohibition on large Indian and foreign-owned seed companies from participating in the seed industry in 1987.³⁹ Furthermore, a New Seed Industry Development Policy launched in 1988 allowed seed companies to import commercial seeds of foreign varieties of grains and

³⁵ Unlike Nigeria however, the Indian Patent Act has been amended three times, particularly in 1999, 2002, and 2005 (i.e. Patents (Amendment) Act 1999, Patents (Amendment) Act 2002, and Patents (Amendment) Act 2005). The Patents (Amendment) Act 2005, published in the Gazette of India on 5 April 2005, is the current Patents Act in force.

³⁶ For discussions on patents for plant varieties under the Indian Patents Act, see generally, Cullet, 'Revision of the TRIPS Agreement Concerning the Protection of Plant Varieties' (n 17) 620-21. See also Chapter 2 for discussions on Nigeria's Patents and Designs Act 1970.

³⁷ See Chapter 2. See also United International Bureaux for the Protection of Intellectual Property (BIRPI), *Model Law for Developing Countries on Inventions* (BIRPI Publication No 801(E), 1965) 11.

³⁸ BIRPI Model Law, s 5. The Indian government also set up two committees to investigate patent systems suited to India prior to the enactment of the Indian Patent Act. See Report of the Patents Enquiry Committee I (1950) (Tek Chand Report) and Shri Justice N Rajagopala Ayyangar, 'Report on the Revision of the Patent Laws' (Government of India 1959). See also Cullet, 'Revision of the TRIPS Agreement Concerning the Protection of Plant Varieties' (n 17) 620-630.

³⁹ Plahe, 'TRIPS Downhill' (n 28) 77.

oilseeds for two years.⁴⁰ After the two-year lapse, the seed companies were required to produce seed in India.

Two key developments between 1989 and 1991 further expanded private sector participation in the Indian seed industry. The World Bank funded another NSP from 1989, while the Indian government introduced an Industrial Policy in 1991.⁴¹ The World Bank NSP and the 1991 Industrial Policy stimulated greater private sector investment in the Indian industry.⁴² These changes led to joint ventures between Indian seed companies and foreign companies, as well as the foreign seed companies' establishment of subsidiaries in India.⁴³ For example, foreign seed companies such as Monsanto, Pioneer, and Cargill started operations in India, while large Indian companies such as EID Parry and Hindustan Lever collaborated with the foreign companies.⁴⁴

The above legal and policy changes which opened up the Indian seed industry to both domestic and foreign seed companies inspired calls for the extension of IPRs systems to plant varieties even before TRIPS entered into force.⁴⁵ Demands for the extension of IPRs to plant varieties were led by the seed companies along with the Seed Association of India (SAI), which was established in 1985.⁴⁶ The seed

⁴⁰ India - Ministry of Agriculture, Department of Agriculture and Cooperation, New Policy on Seed Development 1988 (New Delhi, 16 September 1988)

<http://seednet.gov.in/PDFFILES/NEW_POLICY_NPSD.pdf> accessed 12 August 2017.

⁴¹ The NSP became effective on 28 September 1989, and it was closed on 30 June 1996. The World Bank, 'Implementation Completion Report, India: Third National Seeds Project' (Credit 1952: IN, Report No 16546, 5 May 1997)

<<http://documents.worldbank.org/curated/en/235381468292312892/pdf/multi-page.pdf>> accessed 12 August 2017.

⁴² The maximum allowed equity participation for foreign companies and investors increased from 40 to 51 per cent. Pramod Agrawal, 'Seed Industry Regulations and Seed Industry Development in India' in David Gisselquist and Jitendra Srivastava (eds), *Easing Barriers to Movement of Plant Varieties for Agricultural Development* (World Bank Discussion Paper No 367, World Bank 1997) 105; Pal and Tripp, 'India's Seed Industry Reforms: Prospects and Issues' (n 29) 443-44.

⁴³ Rao, 'Indian Seed System and Plant Variety Protection' (n 15); Plahe, 'TRIPS Downhill' (n 28) 77.

⁴⁴ Biswajit Dhar and Sachin Chaturvedi, 'Introducing Plant Breeders' Rights in India: A Critical Evaluation of the Proposed Legislation' (1998) 1(2) *Journal of World Intellectual Property* 245, 247; Rao, 'Indian Seed System and Plant Variety Protection' (n 15) 848.

⁴⁵ Plahe, 'TRIPS Downhill' (n 28) 77-78.

⁴⁶ The Seed Association of India (SAI) comprises representatives of medium to large firms. It is one of the main seed industry associations in India. As discussed in Chapter 1, the foreign-owned seed companies, mostly from the United States (US) such as Monsanto and Cargill, had successfully

companies and SAI expressed concerns that the Indian Patent Act prohibited ‘methods of agriculture or horticulture’ and India had no *sui generis* plant variety protection system.⁴⁷

To address the prohibition of patents for plant varieties and calls for the establishment of IPRs systems for plant varieties, SAI and the Ministry of Agriculture organised a seminar in March 1989 titled ‘Plant Variety Protection: Pros and Cons.’⁴⁸ The seminar brought together officials from the Ministry of Agriculture, individuals from private domestic and foreign seed companies, as well as representatives from UPOV.⁴⁹ These participants’ discussions focused on (i) the advantages and disadvantages of different types of plant variety protection systems, and (ii) whether to introduce patents or plant breeder’s rights systems in India. In essence, the participants failed to consider whether plant variety protection was even needed in India at all. The failure to debate the introduction or otherwise of a plant variety protection system in India can be attributed to the range of seminar participants that framed the discussions. In particular, with the UPOV representatives’ participation, it was unsurprising that the seminar recommended the UPOV plant breeder’s rights system as best suited for India.⁵⁰

The 1989 seminar helped to shift the discourse on plant variety protection in India. Prior to the seminar, opposition to plant variety protection from the public sector dominated the discussions on the subject.⁵¹ However, the seminar provided a platform to engage in discussions regarding the positive consequences of plant variety protection systems. One of the arguments from the pro-UPOV plant breeders’ rights advocates at the seminar was that the public sector’s inability to

pushed for the extension of both patents and plant variety protection systems in their home countries during this period. The Patent Act was introduced in the US in 1930, a Plant Variety Protection Act in 1970, and Patents from 1980 through the seminal *Diamond v Chakrabarty* decision. See Chapter 1.

⁴⁷ Indian Patent Act 1970, s 3.

⁴⁸ Shaila Seshia, ‘Plant Variety Protection and Farmers’ Rights: Law-Making and Cultivation of Varietal Control’ (6-12 July 2002) *Economic and Political Weekly* 37(27) 2741, 2744 (‘Plant Variety Protection and Farmers’ Rights’).

⁴⁹ *ibid.*

⁵⁰ *ibid.*

⁵¹ *ibid* 2745.

meet the growing seed demand in India could be reversed with the introduction of a plant breeders' rights system because it would incentivise research and breeding of new varieties by both the public and private sectors.⁵² This argument prompted the public sector to rethink its position on plant variety protection.⁵³ Significantly, the seminar created a policy network of pro-plant breeder's rights advocates as well as links with the UPOV office, which influenced calls for the enactment of a UPOV plant breeder's rights system in India.

With the increased awareness about plant variety protection following the seminar, the Indian government commissioned the FAO to study the 'desirability and feasibility' of introducing plant breeder's rights legislation in India.⁵⁴ The FAO report recommended that any plant variety protection system introduced in India ought to simultaneously recognise plant breeders' rights as articulated in UPOV and farmers' rights as articulated in the FAO International Undertaking.⁵⁵ The FAO recommendation highlighting the importance of farmers' rights was also reinforced in a four-day dialogue on farmers' rights organised by the M S Swaminathan Research Foundation (MSSRF) in 1994. The MSSRF dialogue – otherwise referred to as the Swaminathan dialogue – brought together private seed companies, agricultural research universities, officials from the Indian government, CSOs, as well as representatives of intergovernmental organisations such as the FAO and the United Nations Development Programme (UNDP).⁵⁶

⁵² *ibid.*

⁵³ *ibid.*

⁵⁴ Seshia, 'Plant Variety Protection and Farmers' Rights' (n 48) 2746; Dwijen Rangnekar, 'Commentary on the Indian Protection of Plant Varieties and Farmers' Rights Act 2001' in Michael Halewood (ed), *Farmers' Crop Varieties and Farmers' Rights: Challenges in Taxonomy and Law* (Earthscan 2016) 285 ('Commentary on the Indian Protection of Plant Varieties and Farmers' Rights Act 2001').

⁵⁵ See Chapter 3 for discussions on plant breeders' rights and farmers' rights. Seshia, 'Plant Variety Protection and Farmers' Rights' (n 48) 2746; Rangnekar, 'Commentary on the Indian Protection of Plant Varieties and Farmers' Rights Act 2001' (n 54) 285.

⁵⁶ See generally, M S Swaminathan and Vineeta Hoon, 'Methodologies for Recognising the Role of Informal Innovation in the Conservation and Utilization of Plant Genetic Resources: An Interdisciplinary Dialogue' (M S Swaminathan Research Foundation for Research on Sustainable Agricultural and Rural Development, CRSARD Madras, Proceedings No 9, 1994) <<http://eprints.icrisat.ac.in/13165/1/RP-9914.pdf>> accessed 12 August 2017 ('Methodologies for Recognising the Role of Informal Innovation in the Conservation and Utilization of Plant Genetic Resources').

Just as the recommendation of the SAI 1989 seminar highlighted above reflects the dominant actors' (i.e. seed companies, UPOV) interests, the draft Plant Variety Recognition and Rights Act produced by compiling the MSSRF dialogue participants' comments and suggestions reflects the interests of the dominant actors (i.e. CSOs). The MSSRF draft Plant Variety Recognition and Rights Act incorporated significant provisions pushed for by CSOs, such as the recognition of farmers' rights and the establishment of a Community Gene Fund. For example, the MSSRF draft provides that:

Farmers' rights stem from the contributions of farm women and men and rural and tribal families to the creation, conservation, exchange and knowledge of genetic and species diversity of value in plant breeding.⁵⁷

Furthermore, the draft MSSRF recognised farmers as innovators, and recommended the establishment of a Community Gene Fund where payments for use of farmers and farming communities' genetic resources are saved:

There shall be an autonomous Trust to administer a Community Gene Fund deriving its funds from the contributions due to farm, rural, tribal families and communities under the Farmers' Rights component of this Act. The Fund, which will be exempt from income tax, can also receive contributions from national and international seed companies and others interested in strengthening genetic conservation by local communities.⁵⁸

These provisions which seek to protect small-scale farmers' and farming communities' interests are drawn from the FAO International Undertaking.⁵⁹ It is important to highlight here that the MSSRF was particularly knowledgeable about farmers' rights, and committed to introducing these principles in India's plant

⁵⁷ *ibid* 20.

⁵⁸ *ibid* 17.

⁵⁹ See Chapter 3 for discussion on farmers' rights.

variety protection system. This is thanks to MSSRF's founder: Mankombu Sambasivan (M. S.) Swaminathan.

M. S. Swaminathan was the chairman of the United Nations (UN) FAO Council between 1981 and 1985. It was under his chairmanship that the FAO developed the farmers' rights principles and text of the International Undertaking. He was also the chairman of the Keystone Dialogue series from 1988 to 1991, which brought together a variety of stakeholders from opposing positions in the IPRs for plant varieties debates such as representatives from international institutions, governments, seed companies, and CSOs to discuss farmers' rights.⁶⁰ Although the Keystone Dialogue reached certain conclusions on farmers' rights, such as the establishment of a fund to encourage farmers and rural communities' role in genetic conservation, these conclusions were merely declaratory.⁶¹ Thus, once discussions about plant variety protection commenced in India, M. S. Swaminathan was keen to incorporate the farmers' rights principles he had actively contributed to conceptualising at the FAO in his home country's legislation. M. S. Swaminathan's strategy was to push for farmers' rights at the national level, even though it was yet to be adopted under any legally binding treaty at the global level.⁶² As such, the Indian system intended to set an example of farmers' and farming communities' rights, both for other Global South countries and for plant variety protection reforms at the international level.⁶³

⁶⁰ See for example, Keystone Centre, Keystone International Dialogue Series on Plant Genetic Resources, *Madras Plenary Session, Final Consensus Report of the Keystone International Dialogue Series on Plant Genetic Resources* (Second Plenary Session, Madras, India, 29 January - 2 February 1990); Keystone Centre, Keystone International Dialogue Series on Plant Genetic Resources, *Oslo Plenary Session, Final Consensus Report: Global Initiative for the Security and Sustainable Use of Plant Genetic Resources* (Third Plenary Session, Oslo, Norway, 31 May - 4 June 1991) (*Final Consensus Report*).

⁶¹ Keystone Centre, *Final Consensus Report* (n 60) 13.

⁶² The International Undertaking was not legally binding, while the International Treaty on Plant Genetic Resources for Food and Agriculture had not entered into force during the period of the MSSRF dialogue. See Chapter 3.

⁶³ Swaminathan and Hoon, 'Methodologies for Recognising the Role of Informal Innovation in the Conservation and Utilization of Plant Genetic Resources' (n 56) iv; Jayashree Watal, *Intellectual Property Rights in Indian Agriculture* (Indian Council for Research on International Economic Relations, Working Paper No 44, July 1998) 16.

Apart from MSSRF, other CSOs were also actively involved in promoting farmers' interests in India as seen below.⁶⁴ Two notable CSO-led public demonstrations during the TRIPS negotiations were as follows. First, members of Karnataka Rajya Ryota Sangha (KRSS), a farmers' organisation in India's Karnataka state, raided Cargill Seeds India's offices in December 1992.⁶⁵ The protesters, who destroyed office equipment and records, feared that the introduction of a plant variety protection system in India could increase seed prices. Second, a rally in New Delhi of between 18,000 and two million farmers against the proposed plant variety protection provisions in TRIPS, which could have restricted farmers' seed use at the national level.⁶⁶ The rally, termed a *beej Satyagraha* (seed protest), invoked historic Mahatma Gandhi ideas and the ethos from the nationalist movement such as *Satyagraha* and 'Quit India.'⁶⁷

Satyagraha, introduced by Mahatma Gandhi in the early 20th century, literally means 'insistence on truth.'⁶⁸ *Satyagraha* is a form of non-violent or civil resistance which Gandhi deployed during the Indian independence movement.⁶⁹ Similarly, the Quit India slogan was coined at the peak of the national movement against British domination.⁷⁰ These historic nationalist ideas were interlinked with contemporary discourses about national sovereignty over genetic resources and farmers' rights promoted by the Global South in the CBD and the FAO.⁷¹ The mix of the poignant past struggles with the aspiration for the future not only contributed

⁶⁴ For details on CSOs involved in farmers' rights debates in India, see Ramanna, 'Farmers Rights in India' (n 11) 21-23.

⁶⁵ Seshia, 'Plant Variety Protection and Farmers' Rights' (n 48) 2745.

⁶⁶ The rally held on 3 March 1993. Prior to the rally, farmers were arrested in Bangalore and Madras, and there was a ban on the rally, which was only lifted on 1 March 1993. Vandana Shiva, 'Indian farmers rally against Dunkel Draft and MNCs' (1993) North South Development Monitor <<http://www.sunsonline.org/trade/areas/agricult/03051093.htm>> accessed 12 August 2017.

⁶⁷ *Satyagraha* was introduced by Mahatma Gandhi in the early 20th century, which insists on holding on to truth. Gandhi referred to it as 'truth force', 'life force', or 'soul force.' The Quit India slogan was coined at the peak of the national movement against British domination.

⁶⁸ M K Gandhi, *Non-Violent Resistance (Satyagraha)* (Dover Publications Inc 2001) 78 (*Non-Violent Resistance*).

⁶⁹ *ibid.*

⁷⁰ See generally, Mahatma Gandhi, *Quit India* (R K Prabhu and U R Rao eds) (Padma Publications 1942); Francis G Hutchins, *India's Revolution; Gandhi and the Quit India Movement* (Harvard University Press 1973).

⁷¹ See discussions on access-benefit sharing and farmers' rights in Chapter 3.

to the rally's success, it also raised public consciousness about the issues underlying the plant variety protection debates.

As a result, by the early 1990s, there were competing perspectives on plant variety protection in India: the pro-farmer's rights activists and the pro-UPOV plant breeder's rights proponents. Given the level of awareness on plant variety protection in India, the Indian government had a Herculean task of balancing stakeholders' divergent demands. The Indian government proposed the first draft Bill titled 'Plant Variety Protection Act' in 1994, but it was heavily criticised by both the Seed Association and CSOs. The Bill provided for the protection of plant breeders' rights, drawing from both the UPOV 1978 and 1991 Conventions, as well as community and farmers' rights provisions from the CBD and the FAO International Undertaking.⁷² The Bill provided for exclusive rights of breeders to produce, market, export, and import propagating material of protected varieties for a period of 15 years, similar to the UPOV 1978 Convention.⁷³ In line with the UPOV 1991 Convention, the Bill strengthened breeders' rights by extending it to essentially derived varieties, which are varieties derived from protected varieties.⁷⁴ Deviating from the UPOV 1978 and 1991 Conventions, the Bill provided for farmers' rights, including the rights to save, reuse, exchange, and sell (non-branded) farm-saved seeds as set out in the FAO International Undertaking. Yet, the farmers' rights did not provide for ownership or registration of farmers' varieties.⁷⁵

The Bill was opposed by both the plant breeder's rights and farmer's rights advocates. The principal opposition to the Bill from the pro-breeder's rights group was from SAI, which suggested the removal of certain farmers' rights provisions, such as the rights to sell farm-saved seed of protected varieties. SAI argued that

⁷² Biswajit Dhar, Beena Pandey, and Sachin Chaturvedi, 'Farmers' Interests Recognized in Indian PBR Bill' (23 June 1995) 23 *Biotechnology and Development Monitor* 18-21 ('Farmers' Interests Recognized in Indian PBR Bill').

⁷³ See Chapter 3 for a table on the difference between the UPOV 1978 and 1991 Conventions. Dhar, Pandey, and Chaturvedi, 'Farmers' Interests Recognized in Indian PBR Bill' (n 72).

⁷⁴ See Chapter 3 for details on essentially derived varieties. Dhar, Pandey, and Chaturvedi, 'Farmers' Interests Recognized in Indian PBR Bill' (n 72).

⁷⁵ Dhar, Pandey, and Chaturvedi, 'Farmers' Interests Recognized in Indian PBR Bill' (n 72).

the main purpose of plant variety protection would be defeated if farmers were allowed to sell seed of protected varieties.⁷⁶ Conversely, CSOs such as MSSRF, KRRS, Gene Campaign, along with the Research Foundation for Science, Technology and Ecology (RFSTE) opposed the Bill, asserting that the proposed farmers' rights provisions were not strong enough.⁷⁷ In particular, the founders of these CSOs, M S Swaminathan (MSSRF), M D Nanjundaswamy (KRSS), Suman Sahai (Gene Campaign), and Vandana Shiva (RFTSE) were at the forefront of generating and circulating ideas about farmers' and community rights issues. Some of the inadequacies that the CSOs highlighted were (i) the exclusion of farmers' varieties from the protectable subject matter, and (ii) the inadequate benefit sharing provisions, particularly as the proposed Plant Variety Protection Authority which was to implement the benefit sharing provisions had no farmers' representatives.⁷⁸ By the time the TRIPS negotiations were completed in 1994, there was still an impasse between SAI and the CSOs on the Plant Variety Protection Bill.

Post-TRIPS

As seen above, although debates about plant variety protection commenced in India even before TRIPS entered into force, the entry into force of TRIPS on 1 January 1995 heightened pressure for India to establish a plant variety protection system. Following the impasse between the seed industry and CSOs on the 1994 Bill, the Ministry of Agriculture prepared subsequent draft Bills in 1996 and 1997, which were also opposed.⁷⁹ CSOs rejected both Bills, arguing that they did not set out adequate farmers' rights provisions.⁸⁰ The farmers' rights provisions CSOs demanded for included the rights to protect farmers' varieties. With the rejection of the 1996 and 1997 drafts, the Ministry of Agriculture prepared another Bill in 1999. The 1999 Bill was sent to a Joint Committee of Parliament, which organised

⁷⁶ *ibid.*

⁷⁷ See generally, Dwijen Rangnekar, 'Tripping in Front of UPOV: Plant Variety Protection in India' (October-December 1998) 48(4) *Social Action* 432.

⁷⁸ Anitha Ramanna and Melinda Smale, 'Rights and Access to Plant Genetic Resources under India's New Law' (2004) 22(4) *Development Policy Review* 423, 428 ('Rights and Access to Plant Genetic Resources under India's New Law').

⁷⁹ *ibid.*

⁸⁰ *ibid.*

public consultations from January to August 2000 at different locations in India to garner stakeholders' – including CSOs, seed industry, and scientists' – opinions about the Bill.⁸¹

After collating stakeholders' opinions, the Joint Committee prepared a Bill in 2000. Significantly, the Joint Committee included a new chapter on farmers' rights and clarified the benefit sharing provisions. The chapter on farmers' rights included provisions for registering farmers' varieties. Furthermore, the benefit sharing provisions expanded compensation claims for use of farmers and communities' varieties. Following these revisions, the stakeholders generally approved the 2000 Bill. The seed industry moderated its position on farmers' rights, while the CSOs appreciated the inclusion of farmers' rights as a counterbalance to breeders' varieties.⁸² The 2000 Bill was introduced in Parliament and eventually passed into law in August 2001 as the Protection of Plant Varieties and Farmers' Rights Act (PPVFRA).⁸³

The PPVFRA protects the interests of both plant breeders and farmers. As such, it is an example of a creative *sui generis* system Global South countries imagined in their debates at the TRIPS Council.⁸⁴ M. S. Swaminathan notes that the PPVFRA is 'unique because it is the first time anywhere in the world that the rights of both breeders and farmers have received integrated attention.'⁸⁵ Swaminathan explains that farmers and breeders are allies in the struggle for sustainable food production; as such, their rights should be mutually reinforcing and not antagonistic, as demonstrated in the PPVFRA example.⁸⁶ Indeed, the PPVFRA was the first national legislation that explicitly recognised farmers' rights. While the African Model Law, which also provides for farmers' rights, was adopted in 1998 by

⁸¹ *ibid.*

⁸² K S Jayaraman, 'Indian Seed Bill Forges New Ground' (October 2001) 19 *Nature Biotechnology* 895, 895.

⁸³ Protection of Plant Varieties and Farmers' Rights Act 2001 (PPVFRA).

⁸⁴ See discussions of the Global South's position on plant variety protection in Chapter 3.

⁸⁵ M S Swaminathan, 'Farmers Rights: From Law into Action' (25 August 2001) *The Hindu* <<http://www.thehindu.com/2001/08/25/stories/05252523.htm>> 12 August 2017 ('Farmers Rights').

⁸⁶ *ibid.*

African Heads of State, it is simply a regional guideline.⁸⁷ Dwijen Rangnekar concludes that the PPVFRA's drafting history reveals the struggles to push the canon for the right of marginalised developers of plant genetic resources.⁸⁸ Put differently, rather than accepting a plant variety protection system that only provides for a plant breeders' rights system as presented in the earlier Bills, CSOs in India achieved the feat of including in the PPVFRA the rights of farmers and communities who contribute to plant variety development, as shown below.

5.2.2 Unpacking the Plant Variety Protection and Farmers Rights Act

Designing a plant variety protection system is a taxing technical and legal process. Therefore, the Indian Ministry of Agriculture liaised with the UPOV Secretariat to draw from their wealth of legal and technical experience.⁸⁹ The scientific knowledge and information exchanged between the Ministry of Agriculture and UPOV shaped the plant breeders' rights provisions in the PPVFRA. The farmers' rights along with the access and benefit sharing provisions are drawn from the CBD and the FAO International Undertaking. However, the PPVFRA goes beyond the provisions set out in the different international agreements it borrows from. In other words, the PPVFRA does not merely incorporate provisions of international agreements, rather its provisions are tailored to suit the Indian context.

Coverage of the Law

The PPVFRA protects four types of plant varieties: new varieties, extant varieties, farmers' varieties, and essentially derived varieties (EDVs).⁹⁰ New varieties are not expressly defined, but they are required to meet UPOV-styled (commercial) novelty, distinctiveness, uniformity, and stability (DUS) conditions for protection

⁸⁷ See Chapter 4 for detailed discussions on the African Model Law.

⁸⁸ Rangnekar, 'Commentary on the Indian Protection of Plant Varieties and Farmers' Rights Act 2001' (n 54).

⁸⁹ In the process of drafting the PPVFRA, the plant variety protection laws of 15 to 16 UPOV member countries were reviewed. Seshia, 'Plant Variety Protection and Farmers' Rights' (n 48) 2745.

⁹⁰ PPVFRA, ss 14-15.

(discussed in the next section).⁹¹ In addition, only the genera or species specified by the Indian government through notification in the Official Gazette are eligible for protection as new varieties under the PPVFRA.⁹² Thus, the Indian government can restrict the protection of certain plant varieties. The protection of new varieties fulfils the TRIPS obligation under Article 27.3(b). While this provision draws from the UPOV 1991 Convention, it also differs from it because Article 3 of the UPOV 1991 Convention obliges new UPOV members to protect all plant genera and species within 10 years of accession to the Convention.⁹³

Extant varieties are varieties that are already in circulation in India. These include (i) varieties notified under Section 5 of the Seeds Act 1966, (ii) farmers' varieties, (iii) varieties about which there is common knowledge, or (iv) any other variety which is in the public domain.⁹⁴ The protection of extant varieties was included in the PPVFRA to reward past innovations and contributions to plant variety improvements, especially from the public sector.⁹⁵ As seen in (ii) above, farmers' varieties are a subcategory of extant varieties. In addition, Section 2(l) of the PPVFRA specifically defines a farmers' variety as a variety which has been traditionally cultivated and evolved by farmers in their fields, or a wild relative or landrace of a variety about which farmers possess common knowledge.⁹⁶ Significantly, the PPVFRA recognises farmers as breeders (i.e. a person or group of persons or a farmer or group of farmers).⁹⁷ It seeks to recognise farmers' breeding abilities in the same way as breeders engaged in formal research and breeding. The farmers' rights provisions are inspired by Resolution 5/89 of the

⁹¹ PPVFRA, s 15.

⁹² PPVFRA, ss 14 and 29.2.

⁹³ UPOV 1991 Convention, art 3.

⁹⁴ PPVFRA, s 2(j).

⁹⁵ Ramanna and Smale, 'Rights and Access to Plant Genetic Resources under India's New Law' (n 78) 429; Plahe, 'TRIPS Downhill' (n 28) 81.

⁹⁶ Section 2(k) of the PPVFRA defines a farmer as any person who cultivates crops by cultivating the land himself or by directly supervising the cultivation of land through any other person, or conserves and preserves, severally or jointly, with any other person any wild species or traditional varieties or adds value to such wild species or traditional varieties through selection and identification of their useful properties.

⁹⁷ Definition of breeder as set out in PPVFRA, s 2(c).

FAO International Undertaking, which provides for the protection and conservation of farmers' plant genetic resources.⁹⁸

Furthermore, Section 2(i) of the PPVFRA provides that a variety is essentially derived when it: (i) is predominantly derived from an initial variety, or from a variety that itself is predominantly derived from such initial variety; (ii) is clearly distinguishable from such initial variety; and (iii) conforms to such initial variety in the expression of the essential characteristics that result from the genotype or combination of genotype of such initial variety. This EDV provision is directly drawn from the UPOV 1991 Convention.⁹⁹ The EDV provisions were included in the PPVFRA to ensure that the first innovator benefits commercially from subsequent innovations derived from the use of the first innovation. While it was seen in Chapter 3 that EDVs were introduced in the UPOV 1991 Convention to strengthen plant breeders' rights, Anitha Ramanna and Melinda Smale argue that farmers and farming communities could also use the EDV concept to make claims for their farmers' or community varieties used as progenitors to breed new varieties.¹⁰⁰

Conditions for Protection

Section 14 of the PPVFRA provides conditions for the protection of three types of varieties: new varieties, extant varieties, and farmers' varieties. The conditions for protecting EDVs are similar to those of new varieties. The conditions for protection of new varieties broadly follow the UPOV 1991 Convention's template of (commercial) novelty and DUS.¹⁰¹ However, there are certain notable differences.

⁹⁸ FAO Conference, Farmers' Rights Resolution 5/89, Annex to the International Undertaking on Plant Genetic Resources. See Chapter 1 for discussions on the International Undertaking.

⁹⁹ UPOV 1991 Convention, art 14.5.

¹⁰⁰ Ramanna and Smale, 'Rights and Access to Plant Genetic Resources under India's New Law' (n 78) 429.

¹⁰¹ See UPOV 1991 Convention, arts 5-9 and PPVFRA, ss 14-15. Under Section 15(3) of the PPVFRA, a new variety is deemed to be: (a) novel, if, at the date of filing of the application for registration for protection, the propagating or harvested material of such variety has not been sold or otherwise disposed of by or with the consent of its breeder or his successor for the purposes of exploitation of such variety—(i) in India, earlier than one year; or (ii) outside India, in the case of trees or vines earlier than six years, or in any other case, earlier than four years, before the date of

For example, the ‘distinct’ requirement under Section 15.3(b) of the PPVFRA requires that the variety be clearly distinguishable by at least one *essential characteristic* from any other variety whose existence is a matter of common knowledge.¹⁰² Essential characteristics are defined as heritable traits of a plant variety determined by the expression of one or more genes of other heritable determinants that contribute to the principal features, performance, or value of the variety.¹⁰³ This additional agronomic evaluation of a new variety departs from the UPOV construction of ‘distinctiveness.’¹⁰⁴ Article 7 of the UPOV 1991 Convention only provides that a variety is distinct if it is clearly distinguishable from any other variety whose existence is a matter of common knowledge at the time the plant breeder’s rights application is filed. As such, the distinct provision clearly differs from the UPOV template. Also beyond the UPOV conditions are requirements for applicants to submit – along with the applications for registering varieties – a sworn affidavit and a declaration that the genetic or parental material acquired for breeding or improving the variety was lawfully acquired.¹⁰⁵ The affidavits are to state that the variety does not contain any gene or gene sequence involving a terminator technology.¹⁰⁶

Extant varieties, which are varieties in the public domain, are not required to meet the (commercial) novelty condition. Nonetheless, the other three conditions for protection – distinct, uniform, and stable – apply to extant varieties.¹⁰⁷ As farmers’ varieties are a class of extant varieties, it would appear that farmers’ varieties are also required to meet the ‘distinct, uniform, and stable’ conditions. However, the PPVFRA does not point to its regulations or specify how the DUS conditions are

filing such application; (b) distinct, if it is clearly distinguishable by at least one essential characteristic from any other variety whose existence is a matter of common knowledge in any country at the time of filing of the application; (c) uniform, if subject to the variation that may be expected from the particular features of its propagation it is sufficiently uniform in its essential characteristics; (d) stable, if its essential characteristics remain unchanged after repeated propagation or, in the case of a particular cycle of propagation, at the end of each such cycle.

¹⁰² PPVFRA, s 15.3(b).

¹⁰³ PPVFRA, s 2(h).

¹⁰⁴ UPOV 1991 Convention, art 7.

¹⁰⁵ These requirements also apply to other plant varieties. PPVFRA, ss 18.1(c) and (h).

¹⁰⁶ PPVFRA, ss 18.1(c) and (h).

¹⁰⁷ PPVFRA, s 15.2. A three-year moratorium for registering extant varieties is granted once a species is notified under the PPVFRA.

to be applied when assessing farmers' varieties. Nagarajan, Yadav, and Singh, who are officials in the Protection of Plant Varieties and Farmers' Rights Authority (Authority) of the Indian Ministry of Agriculture, conclude that the DUS conditions are unsuited for protecting farmers' varieties, and thus 'need a fresh look.'¹⁰⁸ In other words, it is important to develop a pragmatic procedure for registering farmers' varieties under the PPVFRA.¹⁰⁹

Scope of Protection

Plant breeders are granted protection for registering new varieties for an initial duration of nine years for trees and vines, which is renewable for up to 18 years from the date of registration.¹¹⁰ For all other crops, protection of new varieties is granted for an initial period of six years, renewable for up to 15 years.¹¹¹ Extant varieties are protected for up to 15 years from the date of notification by the central government under Section 5 of the Seeds Act 1966.¹¹² While the duration of protection for farmers' varieties is not explicitly provided, one could conclude that a maximum protection duration of 15 years applies to farmers' varieties for two reasons. First, farmers' varieties are a sub-category of extant varieties, and since extant varieties are protected for up to 15 years, the same provision may apply to farmers' varieties. Second, Section 6(iii) of the PPVFRA provides that the 'total period of validity shall not exceed – in other cases, fifteen years from the date of registration of the variety.'¹¹³ Although the duration of protection for EDVs are also not explicitly set out, they are similar to those of new varieties highlighted above.

The breeder of a new variety – his successor, agent, or licensee – has exclusive rights to produce, sell, market, distribute, import, or export the new varieties, which

¹⁰⁸ S Nagarajan, S P Yadav, and A K Singh, 'Farmers' Variety in the Context of Protection of Plant Varieties and Farmers' Rights Act, 2001' (25 March 2008) 94(6) Current Science 709, 713 ('Farmers' Variety in the Context of Protection of Plant Varieties and Farmers' Rights Act, 2001').

¹⁰⁹ *ibid.*

¹¹⁰ PPVFRA, s 24.6.

¹¹¹ PPVFRA, s 24.6.

¹¹² PPVFRA, s 24.6(ii).

¹¹³ PPVFRA, s 6(iii).

is similar to the UPOV 1978 and 1991 Conventions.¹¹⁴ The scope of protection conferred for breeders of extant varieties, farmers' varieties, and EDVs are not expressly set out in the PPVFRA. Scholars such as Ramanna, Smale, and Rangnekar conclude that the scope of protection for extant varieties, farmers' varieties, and EDVs are similar to the scope of protection for new varieties.¹¹⁵ These breeders' rights are also subject to some exceptions included in the UPOV Convention, such as the research exemption set out in Section 30 of the PPVFRA.¹¹⁶

However, the PPVFRA goes beyond the UPOV Convention by introducing other provisions that limit breeders' rights, such as access and benefit sharing provisions from the CBD, as well as farmers' rights to save, exchange, or sell farm-saved seeds of protected varieties from the FAO International Undertaking.¹¹⁷ For benefit sharing, Section 26 of the PPVFRA provides that upon receipt of a certificate of registration for plant varieties, the Authority is required to publish the contents of the certificate and invite claims of benefit sharing to the registered variety.¹¹⁸ Individuals, groups, firms, governmental, or non-governmental organisations are permitted to submit claims of benefit sharing to the published variety within a specified period.¹¹⁹ The Authority is required to send the copy of the claim to the breeder of the registered variety who may oppose the claim.¹²⁰ After liaising with the claimant and the breeder, the Authority explicitly indicates the amount of the benefit sharing, if any, for which the claimant is entitled.¹²¹ The amount of benefit

¹¹⁴ PPVFRA, s 28.

¹¹⁵ Ramanna and Smale, 'Rights and Access to Plant Genetic Resources under India's New Law' (n 78) 430; Rangnekar, 'Commentary on the Indian Protection of Plant Varieties and Farmers' Rights Act 2001' (n 54) 290-91.

¹¹⁶ UPOV 1991 Convention, art 15.1(ii).

¹¹⁷ PPVFRA, ss 26 and 39.

¹¹⁸ PPVFRA, s 26.1.

¹¹⁹ The individuals and groups are required to be citizens of India, while the firms, governmental, or non-governmental organisations are to be established in India. PPVFRA, s 26.2.

¹²⁰ PPVFRA, s 26.3.

¹²¹ While making the decision, the Authority will take into account the extent and nature of the use of genetic material of the claimant in the development of the variety relating to which the benefit sharing is claimed, as well as the commercial utility and demand in the market of the variety relating to which the benefit sharing is claimed. PPVFRA, s 26.5.

sharing to a variety determined by the Authority is deposited by the breeder in the National Gene Fund.¹²²

The Gene Fund then provides financial resources to generally support farmers and farming communities in conserving plant genetic resources. In particular, farmers who have conserved and improved landraces and wild varieties of economic plants are entitled to recognition and reward from the Gene Fund.¹²³ Furthermore, Section 39.1(iv) of the PPVRFA provides that farmers are entitled to save, use, sow, re-sow, exchange, share, or sell farm produce, including seed of protected varieties, in the same way as they were entitled to before the entry into force of the PPVFRA. However, farmers are prohibited from selling branded seeds of protected varieties.¹²⁴

As of July 2017, the Authority had received a total of 15,053 applications for plant variety registration and had granted 2,688 plant variety protection certificates.¹²⁵ The first farmers' varieties were successfully registered by three farmers – Indrasan Singh, Arun Kumar, and Dev Nath Verma – in 2009 for their rice varieties *Indrasan*, *Hansraj*, and *Tilak Chandan*.¹²⁶ This is historic because the registration of these three varieties makes India the first country in the world to register farmers' varieties. The first new varieties were registered by Maharashtra Hybrid

¹²² The benefit sharing determined here on a reference made by the Authority in the prescribed manner, is recoverable as an arrear of land revenue by the District Magistrate within the local limits of jurisdiction the breeders liable for such benefit sharing resides. PPVFRA, ss 26.6 and 26.7.

¹²³ Landraces are generally locally adapted traditional plant varieties, while wild relatives are plants that evolve in the wild, which were initially untended by humans. The details of the recognition and reward are further set out in the PPVFRA Regulation. PPVFRA, s 39.1(iii).

¹²⁴ PPVFRA, s 39.1(iv).

¹²⁵ Protection of Plant Varieties and Farmers' Rights Authority India, 'Application Status up to 10 July 2017' <<http://plantaauthority.gov.in/pdf/Application%20Status.pdf>> accessed 19 August 2017. The highest applications are for rice (6,137), followed by maize (995) <<http://plantaauthority.gov.in/pdf/Status%20Crop%20wise%20Application1.pdf>> accessed 19 August 2017; Protection of Plant Varieties and Farmers' Rights Authority India, 'List of Certificate Issued up to 28 February 2017' <http://plantaauthority.gov.in/List_of_Certificates.htm> accessed 19 August 2017.

¹²⁶ Protection of Plant Varieties and Farmers' Rights Authority India, *Annual Report: 2009-2010* (Protection of Plant Varieties and Farmers Rights Authority, Department of Agriculture and Cooperation, Ministry of Government of India) 34 <http://plantaauthority.gov.in/pdf/AnnualReport_09-10esum.pdf> accessed 15 August 2017; Protection of Plant Varieties and Farmers' Rights Authority India, 'List of Certificate Issued up to 28 February 2017' (n 125).

Seed Company (Mahyco) in 2009 for bread wheat varieties with male sterile and restore lines: *Triticum aestivum* L, W 6001 and *Triticum aestivum* L, W 6301.¹²⁷ While the first extant varieties were registered by JK Agri Genetics Ltd in 2009 for pearl millet, rice, and sorghum: *JKBH-26(MH-595)*, *JKRH-401(IET 18181, JKRH 2000)*, and *JKSH-22 (JKSH-161)*.¹²⁸

5.2.3 Rethinking UPOV Membership and Seeds Bill

Although the Indian Parliament passed the PPVFRA in 2001, the Indian government delayed its notification until 2005. It is important to note that until the central government in India notifies a legislation, it is not enforceable, even after it had been passed by the Indian Parliament. The central government notified Sections 2 to 13, as well as Sections 95 to 97 of the PPVFRA on 11 November 2005; these sections entered into force on the same day.¹²⁹ This notification led to the establishment of the Authority, as Section 3 of the PPVFRA provides for the creation of a PPVFRA Authority. The Authority subsequently set out regulations for plant variety registration on 7 December 2006, but it was not until 20 February 2007, which is six years after the PPVFRA was passed, that the actual plant variety registration process became fully operational in India.¹³⁰ One of the main reasons for the Indian government's delay in implementing the PPVFRA was that it was also initiating the process to join UPOV.¹³¹ The Indian government made two

¹²⁷ Protection of Plant Varieties and Farmers' Rights Authority India, *Annual Report: 2009-2010* (n 126) 11-12; Protection of Plant Varieties and Farmers' Rights Authority India, 'List of Certificate Issued up to 28 February 2017' (n 125).

¹²⁸ Protection of Plant Varieties and Farmers' Rights Authority India, 'List of Certificate Issued up to 28 February 2017' (n 125).

¹²⁹ Government of India - The Gazette of India: Ministry of Agriculture, *The Provisions of the Protection of Plant Varieties and Farmers' Rights Act, 2001 Shall Come into Force from 11 November 2005* (Regd No D L-33004/99, Part II-Sec 3(ii), Notification New Delhi 11 November 2005) <http://egazette.nic.in/WriteReadData/2005/E_1183_2012_005.pdf> accessed 19 August 2017.

¹³⁰ Government of India - The Gazette of India: Ministry of Agriculture, 'The Protection of Plant Varieties and Farmers' Rights Regulations, 2006' (Regd No D-L 33004/99, Part II-Sec 3(i), Notification New Delhi, 07 December 2006) <http://egazette.nic.in/WriteReadData/2006/E_583_2011_007.pdf> accessed 19 August 2017. The first application to register a variety was filed on 21 May 2007 by Maharashtra Hybrid Seeds Company Ltd. for a pigeon pea (REG 2007/1); see Protection of Plant Varieties and Farmers' Rights Authority India, 'Application Status up to 10 July 2017' (n 125).

¹³¹ Bala Ravi, 'Seeds of Trouble' (08 March 2005) *The Hindu*

notable attempts to join UPOV – the first in 1998, before the PPVFRA was passed and the second in 2002, a year after the PPVFRA was passed. The Indian government also attempted to introduce a Seed Bill which undermined the farmers' rights provisions in the PPVFRA. Each of these attempts is discussed in turn.

On 22 April 1998, the Indian government informed UPOV of its intention to accede to the UPOV 1978 Convention.¹³² India could only deposit its instrument of accession if the UPOV Council approved its law. This is because Article 32.3 of the UPOV 1978 Convention requires the UPOV Council to assess whether national laws conform to the UPOV Convention. Two days after India informed UPOV of its intention to accede to the UPOV 1978 Convention, the UPOV 1991 Convention entered into force.¹³³ However, the UPOV Council exempted India from acceding to its 1991 Convention. India was granted a special opportunity to accede to the UPOV 1978 Convention; this opportunity was open until 24 April 1999. Yet, India did not avail itself of this leeway. Instead, as seen in the post-TRIPS developments above, India carried out extensive stakeholder opinion collation about plant variety protection, and passed the PPVFRA in 2001.

Just one year after passing the PPVFRA, the Indian government revisited its attempt to join UPOV.¹³⁴ On 31 May 2002, the Indian Cabinet approved the government's decision to accede to the UPOV 1978 Act.¹³⁵ Without delay, by June 2002, the Indian government requested UPOV to examine whether the PPVFRA

<<http://www.thehindu.com/2005/03/08/stories/2005030801761000.htm>> accessed 19 August 2017; Prabhash Ranjan, 'Recent Developments in India's Plant Variety Protection, Seed Regulation and Linkages with UPOV's Proposed Membership' (2009) 12(3) *The Journal of World Intellectual Property* 219, 232 ('Recent Developments in India's Plant Variety Protection'); Karine Peschard, 'Farmers' Rights and Food Sovereignty: Critical Insights from India' (2014) 41(6) *The Journal of Peasant Studies* 1085, 1092.

¹³² Ranjan, 'Recent Developments in India's Plant Variety Protection' (n 131) 230.

¹³³ Article 37.3 of the UPOV 1991 Convention provides that no instrument of accession to the UPOV 1978 Convention may be deposited after the entry into force of the UPOV 1991 Convention with certain exceptions.

¹³⁴ Mike Adcock, 'Farmers' Rights' (20 July 2002) *The Hindu*

<<http://www.thehindu.com/2002/07/20/stories/2002072000151000.htm>> accessed 19 August 2017; Ranjan, 'Recent Developments in India's Plant Variety Protection' (n 131) 230.

¹³⁵ National, 'India to accede to Plants Convention' (1 June 2002)

<<http://www.thehindu.com/2002/06/01/stories/2002060102131300.htm>> accessed 19 August 2017; GRAIN, 'India decides to Join UPOV' (6 June 2002)

<<https://www.grain.org/article/entries/1944-india-decides-to-join-upov>> accessed 19 August 2017.

conforms with the UPOV 1978 Convention.¹³⁶ UPOV made a preliminary examination of the PPVFRA in October 2002, raising a number of questions which are not in the public domain,¹³⁷ but from the examination of UPOV in Chapter 3 and the PPVFRA above, some provisions in the PPVFRA which contravene the UPOV plant breeder's rights system can be pinpointed. These include (i) protection of farmers' varieties and extant varieties, (ii) farmers' rights to sell seed of protected varieties, (iii) registration conditions – declaration of prior informed consent along with affidavit stating that the application does not contain gene or gene sequence involving terminator genes, and (iv) the benefit sharing provision.¹³⁸

One wonders why after engaging in extensive consultations during law-making, the Indian government simply attempted to abandon its historic *sui generis* plant variety protection system by going the UPOV way. Jagit Plahe argues that an answer to this is that the Indian government was under pressure from the seed industry to strengthen the rights of commercial plant breeders by joining UPOV.¹³⁹ Although the government attempted to go the UPOV way, CSOs who were also at the forefront of pushing for farmers' rights in the PPVFRA opposed this. In particular, Gene Campaign, one of India's vibrant CSOs dedicated to promoting farmers' and community rights, states that it 'made several attempts to discuss the dangers of UPOV with officials of India's Agriculture Ministry and appealed to them not to take this retrograde step.'¹⁴⁰ As these attempts proved abortive, Gene Campaign turned to legal recourse to challenge the Indian government's decision to join UPOV.

Gene Campaign filed a Writ of Petition in the form of a Public Interest Litigation (PIL) at the Delhi High Court on 1 October 2002 to block the government's

¹³⁶ UPOV, 'Gazette' (No 96, December 2003) 12

<http://www.upov.int/edocs/pubdocs/en/upov_pub_438_96.pdf> accessed 19 August 2017.

¹³⁷ *ibid*; see also Ranjan, 'Recent Developments in India's Plant Variety Protection' (n 131) 231.

¹³⁸ See 5.2.2 above and Chapter 3.

¹³⁹ Plahe, 'TRIPS Downhill' (n 28) 90.

¹⁴⁰ Gene Campaign, 'Advocacy to Protect Farmers' Rights' (n 11).

decision to join UPOV.¹⁴¹ Gene Campaign further requested the Court to (i) declare illegal the Indian government's decision to join UPOV as it violates the PPVFRA, (ii) direct the government not to take any action which contravenes farmers' rights provisions in the PPVFRA, and (iii) direct the government to ensure that none of its future acts impairs or dilutes the farmers' rights provisions in the PPVFRA.¹⁴² On the second point, Gene Campaign referred to Section 86 of the PPVFRA which states that 'the provisions of this Act shall be binding on the Government.' Gene Campaign concluded that the PPVFRA generally reflects India's official position in the TRIPS Council, which seeks to reconcile TRIPS with the CBD and the ITPGRFA.¹⁴³

In the High Court, the government's lawyers maintained that UPOV membership was important to protect breeder's rights, while Gene Campaign advocated to maintain farmers' rights.¹⁴⁴ The High Court granted a stay on the government's move to join UPOV, which is significant to maintaining the farmers' rights provisions in the PPVFRA.¹⁴⁵ Nonetheless, it is important to note that UPOV still lists India as one of the countries that has initiated the procedure of acceding to the UPOV Convention.¹⁴⁶ This implies that India has not withdrawn its UPOV application.

Despite Gene Campaign's 2002 PIL requesting the government not to strengthen breeders' rights through future acts, the Indian government attempted to introduce a Seeds Bill in 2004 which undermines farmers' rights provisions in the PPVFRA.¹⁴⁷ Prabhash Ranjan explains that the Seeds Bill, when analysed in

¹⁴¹ *ibid.*

¹⁴² *ibid*; Suman Sahai, 'Legislate, then Contradict' (1 April 2003) India Together <<http://indiatogether.org/farmright-agriculture>> accessed 19 August 2017 ('Legislate, then Contradict').

¹⁴³ Sahai, 'Legislate, then Contradict' (n 142).

¹⁴⁴ *ibid.*

¹⁴⁵ *ibid.*

¹⁴⁶ UPOV, 'Overview of UPOV' (Publication No 437, 20 March 2017).

¹⁴⁷ Annie Zaidi, 'Seeds of Despair' (30 July – 12 August 2005) 22(16) Frontline <<http://www.frontline.in/static/html/fl2216/stories/20050812001408800.htm>> accessed 19 August 2017 ('Seeds of Despair').

isolation, appears to cover regulation, production, and supply of seeds.¹⁴⁸ However, a close study of the Bill reveals that it introduces provisions that are either in conflict with the PPVFRA or limit certain provisions such as farmers' rights.¹⁴⁹ Two notable provisions in the Seeds Bill are as follows. First, it requires mandatory registration of all plant varieties and seeds sold in India, as opposed to the voluntary registration in the PPVFRA.¹⁵⁰ This provision, which generally covers all varieties including farmers' varieties, limits farmers' ability to sell or exchange unregistered seeds as provided in the PPVFRA.¹⁵¹ Second, it provides for the sale of only those seeds that meet certain registration standards, including a minimum limit of germination, physical purity, and genetic purity.¹⁵² This provision also limits farmers' ability to sell seeds, as they may find it difficult to determine whether their farm-saved seeds meet these technical standards.¹⁵³ Significantly, the Bill excludes provisions on benefit sharing and prior informed consent, which are in the PPVFRA. These exclusions could facilitate unhindered commercialisation of farmers' varieties.

The vibrant Indian CSOs such as Gene Campaign, RFSTE, and All India Kisan Sabha (AIKS) once again blocked the government's move to undermine farmers' rights through the Bill.¹⁵⁴ Suman Sahai from Gene Campaign questioned the Bill's primary focus on interests of commercial breeders and seed companies to the detriment of small-scale farmers.¹⁵⁵ She argues that as the informed consent of farmers is not required during registration, seed companies could use farmers' varieties without recognising the source of their new varieties or sharing profits.¹⁵⁶ Vandana Shiva from RFSTE pointed out that India had fulfilled its TRIPS

¹⁴⁸ Ranjan, 'Recent Developments in India's Plant Variety Protection' (n 131) 234- 35.

¹⁴⁹ *ibid* 235.

¹⁵⁰ Seeds Bill 2004, s 13.

¹⁵¹ See 5.2.2 above for details on farmers' varieties.

¹⁵² Seeds Bill 2004, s 43.1.

¹⁵³ Ranjan, 'Recent Developments in India's Plant Variety Protection' (n 131) 237.

¹⁵⁴ Zaidi, 'Seeds of Despair' (n 147).

¹⁵⁵ See Suman Sahai, 'Submission to Parliamentary Committee on Agriculture on Seeds Bill 2004 (Gene Campaign, 19 June 2006)

<http://genecampaign.org/wpcontent/uploads/2014/07/GCs_Submission_To_Parliamentary_Committee_On_Agriculture_On_Seeds_Bill_2004_19_June_2006.pdf> accessed 19 August 2017 ('Submission to Parliamentary Committee on Agriculture on Seeds Bill, 2004').

¹⁵⁶ *ibid*.

obligations with the PPVFRA, therefore there were no further international obligations requiring it to pass the Seed Bill.¹⁵⁷ Atul Kumar Anjan from AIKS explained that his organisation opposed the Bill because it undermined farmers' rights. He further sent his comments on the Bill to the Parliamentary Standing Committee and followed its developments.¹⁵⁸ The CSOs' interventions proved to be successful as the Seeds Bill 2004 was stalled.

A final point in the analysis in this section is that debates on the Seeds Bill uncover the importance of paying attention to other non-IPRs laws that may have an impact on national plant variety protection systems. This is important because it is another avenue for achieving certain dominant agendas, such as the seed industry's preference for stronger breeders' rights. Without a defined national hierarchy of national legislations as in the Indian case, stakeholders can choose any legislation that best suits their interests. As such, the existence of two conflicting laws can create conflicting rights which may either lead to disputes left to the courts to settle or undermine weaker actors – often the farmers' – interests. In other words, even though the PPVFRA provides for farmers' rights, the Seeds Bill 2004 could have trumped the implementation of farmers' rights in India if it was passed by Parliament.

5.2. Plant Variety Protection: Thailand

Similar to India, Thailand is a predominantly agricultural country, with 32.8 per cent of its labour force employed in the agriculture sector.¹⁵⁹ Rice is Thailand's major export revenue commodity; after India, Thailand is the world's second

¹⁵⁷ Vandana Shiva, 'The Indian Seed Act and Patent Act: Sowing the Seeds of Dictatorship' (14 February 2005) <<https://www.grain.org/fr/article/entries/2166-india-seed-act-patent-act-sowing-the-seeds-of-dictatorship>> accessed 19 August 2017.

¹⁵⁸ Zaidi, 'Seeds of Despair' (n 147).

¹⁵⁹ The World Bank, 'Employment in Agriculture' (% of total employment) <<http://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?end=2015&locations=TH&start=1983>> accessed 19 August 2017. See generally, Ammar Siamwalla, Sutha Setboonsarng, and Direk Patamasasiwat, 'Agriculture' in Peter G Warr (ed), *The Thai Economy in Transition* (Cambridge University Press 1993).

largest rice exporter.¹⁶⁰ Without doubt, rice is a significant crop in Thailand.¹⁶¹ Kwanchai Gomez points out that ‘in Thailand, rice is the essence of life... it is in tradition, folklore, ritual and even language... Life without rice is simply unthinkable.’¹⁶² Other key crops grown in Thailand include cassava, maize, pineapple, soybeans, and sugarcane.¹⁶³ In 2016, agriculture accounted for about 8.3 per cent of Thailand’s GDP.¹⁶⁴ Administratively, Thailand is divided into four regions, comprising 76 provinces and a special administrative area in Bangkok. Within the provinces, there are 787 districts or district branches and about 66,404 villages.¹⁶⁵ The World Bank estimated the Thai population in 2016 at 68,863,514.¹⁶⁶ Over 60 per cent of this Thai population reside in rural areas, with about 90 per cent of the rural population depending on small-scale farming for their livelihood, particularly rice cultivation.¹⁶⁷

The small-scale farmers generally save, reuse, exchange, and sell seeds like other small-scale farmers in the Global South.¹⁶⁸ Apart from the small-scale farmers, the private and public sectors are also significant actors in the Thai agricultural sector.

¹⁶⁰ US Department of Agriculture – Foreign Agriculture Service, ‘Rice: World Markets and Trade’ (n 7).

¹⁶¹ N Chomchalow, ‘Agricultural Development in Thailand’ in Frits Penning de Vries, Paul Teng and Klaas Metselaar (eds), *Systems Approaches for Agricultural Development: Proceedings of the International Symposium on Systems Approaches for Agricultural Development 2-6 December 1991 Bangkok Thailand* (Kluwer Academic Publishers 1993) 437; Pasuk Phongpaichit and Chris Baker, *Thailand Economy and Politics* (Oxford University Press 1995) 3-44; Lindsay Falvey, *Thai Agriculture: Golden Cradle of Millennia* (Kasetsart University Press 2000) 37; 136-68.

¹⁶² Kwanchai Gomez, ‘Rice, The Grain of Culture’ (Presented at the Siam Society Lecture Series, Thailand 20 September 2001) 1
<http://www.thairice.org/html/article/pdf_files/Rice_thegrain_of_Culture.pdf> accessed 24 August 2017.

¹⁶³ Chavalvut Chainuvati and Withaya Athipanan, ‘Crop Diversification in Thailand’ in Minas Papademetrou and Frank Dent (eds), *Crop Diversification in the Asia-Pacific Region* (FAO 2001) 131 <http://coin.fao.org/coin-static/cms/media/9/13171763115260/2001_03_high.pdf#page=137> accessed 23 August 2017 (‘Crop Diversification in Thailand’).

¹⁶⁴ The World Bank, ‘Thailand – Agriculture, Value Added: % of GDP’
<<https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=TH.-TH>> accessed 23 August 2017.

¹⁶⁵ Chainuvati and Athipanan, ‘Crop Diversification in Thailand’ (n 163) 130.

¹⁶⁶ The World Bank, ‘Thailand – Population’
<<https://data.worldbank.org/indicator/SP.POP.TOTL?locations=TH>> accessed 23 August 2017.

¹⁶⁷ Chainuvati and Athipanan, ‘Crop Diversification in Thailand’ (n 163) 130; *Thailand*
<http://www.fao.org/nr/water/aquastat/countries_regions/THA/> accessed 23 August 2017

¹⁶⁸ Kingkorn Narintarakul, ‘Thailand’s Freedom Seeds Network: Can Jack Face the Giant?’ (BIOTHAIR 2015) <<http://www.biothai.org/node/490>> accessed 23 August 2017.

One of the earliest private seed companies in Thailand – Chia Thai, which focused on importing and introducing improved vegetable seed varieties, was established in 1921.¹⁶⁹ There are now about 100 private seed companies in Thailand.¹⁷⁰ The Thai government's involvement in the agricultural sector is mainly through the Thai Ministry of Agriculture and Cooperatives (MOAC) established in 1972 and its 23 seed centres spread across all the regions in Thailand.¹⁷¹ These institutions coordinate agricultural research and development in Thailand. However, the Thai government encourages private sector dominance of seed production. Therefore, public institutions do not produce the same types of seeds as those produced by the private sector.¹⁷²

5.2.1. Historical Evolution of Plant Variety Protection in Thailand

Pre-TRIPS

Although Thailand circumvented colonisation, the bordering countries of modern day Thailand were colonised by Britain and France.¹⁷³ Other Southeast Asian countries such as Myanmar (also known as Burma) and Malaysia were colonised by Britain, while Laos and Cambodia were colonised by France. Thailand was the only Southeast Asian country that was not colonised by Europeans. However,

¹⁶⁹ Larry Brown, Wayne Underwood, Sopin Tongpan, and Uoychai Vattraphoudej, 'Private Sector Development in the Thai Seed Industry' (US Agency for International Development (USAID), Evaluation Special Study No 23 June 1985) 1 <http://pdf.usaid.gov/pdf_docs/PNAAL047.pdf> accessed 25 August 2017 ('Private Sector Development in the Thai Seed Industry').

¹⁷⁰ Wilchar Thitiprasert, Chutima Ratanasatien, Songkran Chitrakon, Orapin Watanesk, Somsong Chotecheun, Veerana Sinsawat Forrer, Wilailak Sommut, Songul Somsri, Prasartporn Samitaman and Suchitra Changtragoon, *Country Report on the State of Plant Genetic Resources for Food and Agriculture in Thailand, 1997-2004* (FAO, Department of Agriculture, Ministry of Agriculture and Cooperatives, February 2007) 13 <<http://www.fao.org/docrep/013/i1500e/Thailand.pdf>> accessed 23 August 2017 (*Country Report on the State of Plant Genetic Resources for Food and Agriculture in Thailand, 1997-2004*).

¹⁷¹ The first seed centre was established in Pitsanulok in 1974. Department of Agriculture, 'Historical Background' <http://www.doa.go.th/en/?page_id=123> accessed 23 August 2017; see also Thitiprasert and others, *Country Report on the State of Plant Genetic Resources for Food and Agriculture in Thailand, 1997-2004* (n 170) 13.

¹⁷² Thitiprasert and others, *Country Report on the State of Plant Genetic Resources for Food and Agriculture in Thailand, 1997-2004* (n 170) 58-59.

¹⁷³ Thailand was originally known as Siam. The country's name was changed to Thailand in 1939. Peter G Warr, 'The Thai Economy' in Peter G Warr (ed), *The Thai Economy in Transition* (Cambridge University Press 1993) 9 ('The Thai Economy').

Thailand made territorial concessions to the British and French to maintain its independence. Furthermore, Thailand made key diplomatic decisions to maintain its independence, such as (i) lifting the traditional ban on rice export in 1851, and (ii) signing of the Bowring Treaty between King Mongkut (Rama IV) and Great Britain in 1855, which required Thailand to develop free trade economic policies.¹⁷⁴ Prior to 1851, the previous monarch had sought to preserve Thai rice for Thai people, ignoring Western calls to open up Thailand.¹⁷⁵

From the above, one notable feature in Thailand is the significant role of its monarchy. Thailand had absolute monarchs who were responsible for making all the laws of the land until 1932.¹⁷⁶ This changed after a bloodless revolution in 1932, when a group of foreign-educated students and military personnel demanded that the king (King Prajadhipok) grant the people a Constitution.¹⁷⁷ King Prajadhipok granted this, transforming Thailand into a constitutional monarchy in 1932. As a result, the Thai monarch is regarded as a symbolic or ceremonial head of state, while a prime minister is the head of the Thai government.¹⁷⁸ Nonetheless, the Thai people still revere their monarchs. In particular, King Bhumibol Adulyadej, who was monarch from 1946, took a keen interest in agriculture and rural development.¹⁷⁹ King Bhumibol had toured the country after ascending the throne and was aware of Thai farmers' hardships. From the 1950s, King Bhumibol promoted sustainable farming practices. He introduced the Sufficiency Economy philosophy which became the basis of national laws, policies, and programmes.¹⁸⁰

¹⁷⁴ Ammar Siamwala, *A History of Rice Policies in Thailand* (Stanford University Press 1976) 233-34 (*A History of Rice Policies in Thailand*); Warr 'The Thai Economy' (n 173) 9-10; John Bowring, *The Kingdom and People of Siam: With a Narrative of the Mission to that Country in 1855: Volume 2* (First published in 1857, Cambridge University Press 2013) 323.

¹⁷⁵ Before this, Thailand had exported rice to only a few countries such as China and British settlements on the Malay Peninsula. Siamwala, *A History of Rice Policies in Thailand* (n 174) 233.

¹⁷⁶ Warr, 'The Thai Economy' (n 173) 10-11.

¹⁷⁷ The 1932 coup was the first of a series of military coup d'états and attempted coups in Thailand. Since 1932, Thailand has experienced about 19 coups and attempted coups. The coup of 22 May 2014 led by General Prayut Chan-o-cha is Thailand's most recent coup. See generally, Warr, 'The Thai Economy' (n 173) 10-18; Panarat Thepgumpanat and Patpicha Tanakesemipat, 'Three Years after Coup, Junta is Deeply Embedded in Thai Life' (Reuters World News, 21 May 2017).

¹⁷⁸ Warr, 'The Thai Economy' (n 173) 4.

¹⁷⁹ King Bhumibol Adulyadej (ceremonial head of state from 1946- 2016).

¹⁸⁰ The Chaipattana Foundation, 'Philosophy of Sufficiency Economy' <http://www.chaipat.or.th/chaipat_english/index.php?option=com_content&view=article&id=4103> accessed 19 August 2017. The Chaipattana Foundation is a non-governmental organisation

Sufficiency Economy emphasises balancing the interests of all stakeholders or choosing ‘the middle way.’¹⁸¹ In general, three pillars of the Sufficiency Economy philosophy are moderation, reasonableness, and risk management.¹⁸² Moderation urges sufficiency at a level of not doing too little or too much at the expense of oneself or others,¹⁸³ such as producing and consuming at a moderate level. Reasonableness promotes making decisions rationally by considering all factors involved and carefully anticipating the outcomes of such actions.¹⁸⁴ Risk management focuses on preparing to handle the likely impacts and considering the probability of future situations.¹⁸⁵ Application of Sufficiency Economy requires an all-round knowledge of the subject matter as well as integrity, honesty, patience, and perseverance.¹⁸⁶ King Bhumibol encouraged the adoption of his Sufficiency Economy philosophy both as a model for national economic development and on a personal level.

However, two World Bank engagements with Thailand gradually expanded the Thai agricultural sector. First, Thailand received a World Bank loan in 1950 for a large-scale irrigation project to promote agriculture production.¹⁸⁷ Second, the World Bank published reports on public development programmes for Thailand in 1957 and 1958, which informed the first Thai National Economic and Social

which was officially registered on 14 June 1988. King Bhumibol was the Honorary President of the Foundation, while his daughter Princess Maha Chakri Srinthom was the Executive Chairperson. The Foundation was established to provide timely responses questions or challenges Thai people faced with the different royal development projects. See also Danny Unger, ‘Sufficiency Economy and Bourgeois Virtues’ (2009) 36(3) *Asian Affairs* 139.

¹⁸¹ Office of the National Economic and Social Development Board, ‘Sufficiency Economy: Implications and Applications’ (Sufficiency Economy Movement Sub-committee, Office of the National Economic and Social Development Board, September 2007)

<https://web.archive.org/web/20110719090603/http://www.nesdb.go.th/Md/book/booksuffwork_eng.pdf> accessed 19 August 2017. For National Economic and Social Development Plans, see Office of the National Economic and Social Development Board

<http://www.nesdb.go.th/nesdb_en/main.php?filename=develop_issue> accessed 19 August 2017.

¹⁸² The Chaipattana Foundation, ‘Philosophy of Sufficiency Economy’ (n 180).

¹⁸³ *ibid.*

¹⁸⁴ *ibid.*

¹⁸⁵ *ibid.*

¹⁸⁶ *ibid.*

¹⁸⁷ See Schedule 2 for description of project. Legal ISC Files, ‘Thailand-Irrigation Project: Loan 0036-Loan Agreement – Confirmed’ (World Bank 1950)

<<http://documents.worldbank.org/curated/en/596861468101386382/pdf/Loan-0036-Thailand-Irrigation-Project-Loan-Agreement.pdf>> accessed 20 August 2017.

Development (NESD) Plan 1961.¹⁸⁸ The NESD Plan set out a nationwide expansion of agricultural production. Notably, before the NESD was launched in 1961, Thailand was a predominantly small-scale centred agricultural economy, with over 80 per cent of the population engaged in the agricultural sector, and rice as the main crop for both domestic consumption and export.¹⁸⁹ However, this changed with the government's focus on increased agricultural production, starting from the NESD in 1961 which introduced a private sector-led economic industrialisation, including in agriculture.¹⁹⁰

Following the focus on increased production, HYVs or green revolution varieties were introduced in the late 1960s.¹⁹¹ However, just like in India, the HYVs were not popular amongst Thai small-scale farmers. Surichai Wun Gaeo explains that reasons for farmers' limited use of high yield rice varieties in the 1970s included high costs of inputs such as fertiliser and agrochemicals necessary for planting the varieties.¹⁹² Furthermore, the Thai government's NESD plans, tax policies, and duty privileges facilitated the influx of foreign and domestic agribusinesses alongside seed companies in Thailand from the 1970s.¹⁹³ For example, one of the largest domestic agribusinesses – Charoen Pokphand Foods PCL – was registered in Thailand in 1978.¹⁹⁴ In addition, multinational seed companies such as Cargill

¹⁸⁸ The World Bank, 'A Public Development Program for Thailand' (John Hopkins Press 1959) <<http://documents.worldbank.org/curated/en/338951468777615392/pdf/multi0page.pdf>> accessed 21 August 2017; Government of Thailand, 'Evaluation of The First Six Year Plan: 1961-1966' (National Economic Development Board, Office of the Prime Minister, Bangkok, Thailand, June 1967) <http://www.nesdb.go.th/nesdb_en/ewt_dl_link.php?nid=3776> accessed 19 August 2017.

¹⁸⁹ Medhi Krongkaew 'Contributions of Agriculture to Industrialization' in Medhi Krongkaew (ed), *Thailand's Industrialization and its Consequences* (St Martin Press 1995) 34.

¹⁹⁰ Government of Thailand, 'Evaluation of the First Six Year Plan: 1961-1966' (n 188).

¹⁹¹ Surichai Wun Gaeo, "'Green Revolution" and Socio-Economic Implications for Rural Communities in Thailand' (January 1978) 30 *Akademika* 7, 11 ('Green Revolution').

¹⁹² *ibid* 14.

¹⁹³ Phongpaichit and Baker, *Thailand Economy and Politics* (n 161) 59; Prapimphan Chiengkul, *The Political Economy of the Agri-Food System in Thailand: Hegemony, Counter-Hegemony, and Co-Optation of Oppositions* (Routledge 2017) 51 (*The Political Economy of the Agri-Food System in Thailand*). For National Economic and Social Development Plans: The Second Plan (1967-1971), The Third Plan (1972-1976), The Fourth Plan (1977-1981), The Fifth Plan (1982-1986), see Office of the National Economic and Social Development Board,

<http://www.nesdb.go.th/nesdb_en/main.php?filename=develop_issue> accessed 19 August 2017.

¹⁹⁴ Charoen Pokphand Foods PCL, <<https://www.cpfworldwide.com/en/about/milestones>> accessed 23 August 2017.

Seeds, Pacific Seeds, Pioneer Hi-Bred, and Uniseeds established subsidiaries in Thailand also from the late 1970s and early 1980s.¹⁹⁵

The first Thai patent law, the ‘Patent Act B.E 2522’, entered into force on 12 September 1979. Similar to India and Nigeria, the Thai Patent Act prohibits patents on plant varieties.¹⁹⁶ Notably, Thailand, like India and Nigeria, was one of the countries that was invited to review the BIRPI Model Law for Industrially Less Developed Countries.¹⁹⁷ As seen from 5.2.1 above and Chapter 2, the BIRPI Model Law prohibits patents for plant varieties, which could have inspired the similar prohibition in Thailand.

During TRIPS Negotiations (1986-1994)

Despite the growth of agribusinesses and seed companies in Thailand from the 1970s, King Bhumibol continued to promote initiatives to safeguard the interests of small-scale farmers. In line with his Sufficiency Economy philosophy, he developed a ‘New Theory’ on agriculture in 1992.¹⁹⁸ The New Theory proposes that farmers apply the key principles of the Sufficiency Economy philosophy to their farming practices to protect them from the impact of globalisation, such as price fluctuations and farming conditions, including droughts, flooding, and plant diseases.¹⁹⁹ One of the suggestions under the ‘New Theory’ was for farmers to

¹⁹⁵ Brown and others, ‘Private Sector Development in the Thai Seed Industry’ (n 169) 10-11; Orachos Napisintuwong, ‘Development and Concentration of Maize Seed Market in Thailand’ (Agricultural and Resource Economics Working Paper No 2560/2, Department of Agricultural and Resource Economics, Faculty of Economics, Kasetsart University, March 2017) 4 <<ftp://ftp.repec.org/opt/ReDIF/RePEc/kau/wpaper/are201702.pdf>> accessed 25 August 2017.

¹⁹⁶ The Patent Act was amended in 1992 by the Patent Act (No 2) B E 2535(1992) and Patent Act (No 3) B E 2542 (1999). These amendments maintain the prohibition on patenting plant varieties.

¹⁹⁷ See 5.2.1 above and Chapter 2 for discussions on the patent provisions for plant varieties in Nigeria.

¹⁹⁸ King Bhumibol got his inspiration for the ‘New Theory’ during his visit to Kut To Kaen Village, Kalasin Province in Northeastern Thailand on 25 November 1992. During that visit, he noted that while the villagers had a good rice harvest, closer inspection of the rice revealed that although the rice had grown well, it did not produce many grains. King Bhumibol and His Enlightened Approach to Teaching, ‘The New Theory and the Sufficiency Economy’ <http://thailand.prd.go.th/ebook2/king/new_theory.html> accessed 21 August 2017. See also Office of the National Economic and Social Development Board, ‘Sufficiency Economy Implications and Applications’ (n 181).

¹⁹⁹ The Chaipattana Foundation, ‘The New Theory’

engage in communal agriculture, where the community is at the centre of production, harvesting, processing, and marketing of crops.²⁰⁰ As will be seen below, King Bhumibol's philosophy and ideas inspired CSOs such as Biodiversity Sustainable Agriculture Food Sovereignty Action Thailand (BIOTHAIR) to promote farmers' and community interests during debates about implementing TRIPS obligations in Thailand.²⁰¹ Prapimphan Chiengkul notes that King Bhumiphol was widely admired in Thailand for his dedication to agriculture and rural development projects. As such, his philosophy spurred counter-hegemonic movements in the Thai agriculture sector.²⁰²

While King Bhumibol's philosophy informed ideas about the protection of farmers' and community interests, ideas about plant breeders' rights started circulating in Thailand from July 1994. This was as a result of a seminar organised by the UPOV office in cooperation with the Thai Department of Agriculture,²⁰³ and with the assistance of New Zealand's Ministry of Trade.²⁰⁴ The UPOV Vice Secretary, along with the Commissioner of Plant Variety Rights of New Zealand, participated in a working group on the introduction of plant variety protection in

<http://www.chaipat.or.th/chaipat_english/index.php?option=com_content&view=article&id=4121&Itemid=296> accessed 21 August 2017.

²⁰⁰ The King had three key suggestions (or phases) for the New Theory. The second phase is the community farming (expansion/marketing phase) discussed above. The other two key suggestions are the following: (i) Implementation and production phase: here, farmers are to strive to be self-sufficient by producing enough food for their family through division of land into four parts in a ratio of 30:30:30:10. The first 30 per cent is for a pond to support cultivation, the second and third 60 per cent are for crop planting, while the remaining 10 per cent is set aside as the service area for dwelling, paths, ramps, kitchen, and livestock pens. (iii) Advancement/processing/adding value phase: here, farmers are to connect with other organisations and agencies to facilitate the expansion of commercial activities such as setting up of rice mills, community shops, and service stations. In this phase, farmers are also to learn and acquire experience in production, processing, and marketing agricultural products.

²⁰¹ BIOTHAIR, Biodiversity Sustainable Agriculture Food Sovereignty Action Thailand <<http://www.biothai.org/>> accessed 21 August 2017.

²⁰² Chiengkul, *The Political Economy of the Agri-Food System in Thailand* (n 193) 58-59.

²⁰³ The seminar was held in Bangkok, Thailand on 28 July 1994. UPOV, 'Council: Twenty-Ninth Ordinary Session Geneva, 17 October 1995: Annual Report of the Secretary-General for 1994' (C/29/2, 10 August 1995) 6 <http://www.upov.int/edocs/mdocs/upov/en/c_29/c_29_2.pdf> accessed 21 August 2017.

²⁰⁴ UPOV, 'Council: Twenty-Ninth Ordinary Session Geneva, 17 October 1995: Annual Report of the Secretary-General for 1994' (n 203) 6.

Thailand, organised by the Thai MOAC on 29 July 1994.²⁰⁵ On the same day, the UPOV and New Zealand officials also visited the Thai Department of Intellectual Property within the Ministry of Commerce (MOC).²⁰⁶ As discussed in Chapter 2, different national ministries and institutions, including agriculture, trade, and environment, are relevant to plant variety protection. This is no different in Thailand. As will be seen below, the ministries of agriculture and commerce played significant roles in the Thai plant variety protection law-making process.

Growing consciousness about plant varieties and seed trade in Asia also led to the establishment of the Asia and Pacific Seed Association (APSA) in September 1994. APSA was formed at the Asian Seed Conference which held in September 1994 in Thailand.²⁰⁷ The Seed Association of Thailand (SAT) was active in organising both the Asian Seed Conference and the establishment of APSA.²⁰⁸ While APSA has links with organisations such as the WTO, FAO, and UPOV, it clearly favours the UPOV 1991 Convention as its preferred plant variety protection system.²⁰⁹ APSA concludes that a plant breeder's rights system styled on the UPOV 1991 Convention not only encourages domestic investment in plant breeding, it also attracts foreign investments.

Accordingly, the UPOV office alongside multinational seed companies and Thai plant breeders pushed for an UPOV-styled plant breeder's rights system in

²⁰⁵ New Zealand was a UPOV member from 8 November 1981. However, New Zealand is party to the UPOV 1978 Convention. UPOV, 'Council: Twenty-Ninth Ordinary Session Geneva, 17 October 1995: Annual Report of the Secretary-General for 1994' (n 203) 11.

²⁰⁶ UPOV, 'Council: Twenty-Ninth Ordinary Session Geneva, 17 October 1995: Annual Report of the Secretary-General for 1994' (n 203) 11.

²⁰⁷ The Asia and Pacific Seed Association, <<http://apsaseed.org/>> accessed 22 August 2017. APSA was established through an FAO-DANIDA trust fund project to serve as a forum to improve quality seed production and trade in Asia and the Pacific. Anthony Tse, 'Welcome Remarks by the President of the Asia and Pacific Seed Association' in *Seed Policy and Programmes for Asia and the Pacific: Proceedings of the Regional Technical Meeting on Seed Policy and Programmes for Asia and the Pacific, Bangkok, Thailand, 2-6 May 1999* (FAO Plant Production and Protection Paper 160, Seed and Plant Genetic Resources Service, FAO Plant Production and Protection Division 2000) 19.

²⁰⁸ Seed Association of Thailand, <http://seed.or.th/english/eng_intro.htm> accessed 22 August 2017.

²⁰⁹ See for example, Asia and Pacific Seed Association, 'APSA Position on Intellectual Property Rights for the Seed Industry' <<http://apsaseed.org/wp-content/uploads/2017/02/FINAL-APSA-IPR-Position-Paper.pdf>> accessed 22 August 2017.

Thailand. Responding swiftly, the Thai MOC and MOAC prepared different draft plant variety protection Bills in 1994.²¹⁰ Gabrielle Gagne and Chutima Ratanasatien point out that the Thai government was uncertain about which institution had the competence to draft the Bill, as the mandates of the MOC and MOAC are both relevant to plant variety protection.²¹¹ The similarly structured Bills narrowly focused on protecting plant breeders' rights in line with the UPOV 1978 and 1991 Conventions, providing for the protection of only new plant varieties. Notably, the Bills neither recognised nor rewarded farmers' and farming communities' contributions to conserving and developing plant varieties. The significant difference between the Bills was the governing ministry for the Act. The MOC would have been responsible for governing plant variety protection under the MOC Bill, while the MOAC would have been responsible under the MOAC Bill.²¹²

CSOs, farmer groups, and academic activists such as BIOTHAIR and Assembly of the Poor (AOP) rejected these Bills.²¹³ Their main reason for rejecting the Bills was that the narrow focus on plant breeders' rights to the exclusion of farmers' and community' rights as well as access and benefit sharing would adversely affect farmers' and farming communities' interests. The CSOs were concerned that the exclusion of these farmers and community rights meant that the Thai plant variety protection system would exclude the protection of plant varieties unique to

²¹⁰ Jaroen Compeerapap, 'The Thai Debate on Biotechnology and Regulations' (1997) 32 *Biotechnology and Development Monitor* 1315 ('The Thai Debate on Biotechnology and Regulations').

²¹¹ Gabrielle Gagne and Chutima Ratanasatien, 'Commentary on Thailand's Plant Varieties Protection Act' in Michael Halewood (ed), *Farmers' Crop Varieties and Farmers' Rights: Challenges in Taxonomy and Law* (Earthscan 2016) 313 ('Commentary on Thailand's Plant Varieties Protection Act').

²¹² Compeerapap, 'The Thai Debate on Biotechnology and Regulations' (n 210).

²¹³ Rajeswari Kanniah, 'Plant Variety Protection in Indonesia, Malaysia, the Philippines and Thailand' (2005) 8(3) *The Journal of World Intellectual Property* 283, 287 ('Plant Variety Protection in Indonesia, Malaysia, the Philippines and Thailand'); Jakkrit Kuanpoth, 'Protection of Traditional Knowledge in the Face of Globalisation: Balancing Mechanism between CBD and TRIPS' (2009) 12(1) *Thailand Journal of Law and Policy* <<http://www.thailawforum.com/articles/Legal-Protection-Of-Traditional-Knowledge.html>> accessed 22 August 2017.

Thailand such as Jasmine rice.²¹⁴ Thus, by the conclusion of the TRIPS negotiations in 1994, Thailand, like India, did not have a plant variety protection system. Nonetheless, at the TRIPS Council, Thailand aligned with the Global South position for a creative *sui generis* system that incorporates farmers' rights as well as access and benefit sharing principles.²¹⁵

Post-TRIPS

In response to the CSOs' opposition, the Thai government set up a National Committee for Plant Variety Protection Bill Drafting (Committee) in 1997. The Committee was made up of wide-ranging stakeholders, including CSOs, farmers, plant breeders, the private sector, and academics, who were tasked to redraft the bill.²¹⁶ One reason for the Thai government's inclusion of wide-ranging stakeholders could be King Bhumibol's Sufficiency Economy philosophy which emphasises the importance of balancing the interests of all stakeholders in law- or policy-making.²¹⁷ Indeed, Jakkrit Kuanpoth notes that the Sufficiency Economy philosophy provided the foundation for the Thai government to deal with globalisation concerns, which include domesticating TRIPS.²¹⁸ Furthermore, from 1997, there was increased public awareness of plant variety protection in Thailand as a result of the media attention it received.²¹⁹ For example, the media covered

²¹⁴ Daniel F Robinson, 'Governance and Micropolitics of Traditional Knowledge, Biodiversity and Intellectual Property in Thailand' (Research Report, National Human Rights Commission of Thailand, Bangkok, UNSW and University of Sydney, February 2006) 61

<<https://www.iprsonline.org/resources/docs/Final%20HRC%20Micropolitics%20Report%20Mar%202005.pdf>> accessed 23 August 2017.

²¹⁵ See Chapter 3 for details on the Global South's preference at the TRIPS Council.

²¹⁶ Witton Lianchamroon, 'Community Rights and Farmers' Rights in Thailand' (1998) 36 *Biotechnology and Development Monitor*, 9-11; Kanniah, 'Plant Variety Protection in Indonesia, Malaysia, the Philippines and Thailand' (n 213) 287.

²¹⁷ See King Bhumibol's Sufficiency Economy philosophy above. See also Office of the National Economic and Social Development Board, 'Sufficiency Economy: Implications and Applications' (n 181).

²¹⁸ Jakkrit Kuanpoth, 'Pushing against Globalization: The Response from Civil Society Groups in Thailand' in John Gillespie and Randall Peerenboom (eds), *Regulation in Asia: Pushing Back on Globalization* (Routledge 2009) 198 ('Pushing against Globalization').

²¹⁹ BIOTHAIR and GRAIN, 'Signposts to *Sui Generis* Rights' (Resource materials from the International Seminar on *Sui Generis* Rights Co-organised by BIOTHAIR and GRAIN, Bangkok, 1-6 December 1997, February 1998) <<https://www.grain.org/article/entries/2-signposts-to-sui-generis-rights>> accessed 22 August 2017 ('Signposts to *Sui Generis* Rights').

stories about attempts by a Japanese company to patent a Thai traditional plant and by an American company to patent a strand of Jasmine rice (Jasmati).²²⁰

With the level of public awareness generated, CSOs and academic activists resolved to cooperate with other similar Global South state and non-state actors to exchange ideas about designing *sui generis* plant variety protection systems. Thus, Thai CSOs led by BIOTHAIR, with support from GRAIN, organised a ‘South-South brainstorming on *sui generis* rights.’²²¹ The BIOTHAIR and GRAIN international seminar on *sui generis* systems rights held at Thammasat University’s Rangsat Campus near Bangkok, Thailand from 1 to 6 December 1997.²²² 45 representatives of academic, indigenous, peasant, non-governmental, and governmental organisations from 19 countries across Africa, Asia, and Latin America attended the seminal event.²²³

The Thammasat seminar dissected the definition of the *sui generis* option in Article 27.3(b) of TRIPS.²²⁴ As TRIPS is an IPRs instrument, the seminar participants agreed that a TRIPS-compliant *sui generis* system should inevitably be an IPRs system. Similarly, the seminar participants agreed that the *sui generis* option provides flexibility to design plant variety protection systems that safeguard farmers’ and farming communities’ interests as well as their livelihoods.²²⁵ The seminar participants adopted the ‘Thammasat Resolution’, which presents a holistic understanding of the *sui generis* plant variety protection option under TRIPS from a Global South perspective.²²⁶ While the Thammasat Resolution

²²⁰ Muriel Lightbourne, ‘The Jasmati Trademark Affair’ (GRAIN, 26 March 1999) <<https://www.grain.org/fr/article/entries/2060-the-jasmati-trademark-affair>> accessed 22 August 2017; Kuanpoth, ‘Pushing against Globalization’ (n 218) 200-01 (‘Pushing Against Globalization’); Daniel Robinson, *Confronting Biopiracy: Challenges, Cases and International Debates* (Earthscan 2010) 87-88; Chiengkul, *The Political Economy of the Agri-Food System in Thailand* (n 193) 116.

²²¹ BIOTHAIR and GRAIN, ‘Signposts to *Sui Generis* Rights’ (n 219).

²²² The venue – ‘thammasat’ – was deliberately chosen, because its meaning aligned with the underlying purpose for the seminar. In Thai, ‘thammasat’ means knowledge of nature or justice. ‘The Thammasat Resolution, Building and Strengthening our *Sui Generis* Rights’ <<http://www.twm.my/title/tham-cn.htm>> accessed 22 August 2017 (The Thammasat Resolution).

²²³ The Thammasat Resolution (n 222).

²²⁴ *ibid.*

²²⁵ *ibid.*

²²⁶ *ibid.*

affirmed that *sui generis* plant variety protection systems suited to the Global South include community and collective rights (such as farmers' rights) which apply to indigenous peoples, peasants, family farmers, and local communities, it clearly states that these rights are indivisible and intergenerational.²²⁷ As such, community and farmers' rights should not be misinterpreted as or denatured into IPRs.²²⁸

Two points clearly emerge from this conclusion in the Thammasat Resolution. First, while the Thammasat Resolution states that its *sui generis* community rights are not IPRs, it does not provide alternative TRIPS-compliant IPRs systems or principles. This is problematic because the participants also oppose patents on life forms, including plant varieties. With the elimination of the patent option and the adoption of a non-IPRs *sui generis* system, the seminar participants presented a normative interpretation of the *sui generis* system, rather than a practical guide to designing a TRIPS-compliant *sui generis* system in the Global South. Second, there are clear divergences within the Global South on the meaning of farmers' and community rights. For example, the Indian PPVFRA provides IPRs protection for farmers' varieties, as seen above.²²⁹ Furthermore, the farmers' and community rights provisions were not fully developed in the African Model Law, as discussed in Chapter 4.²³⁰ Thus, while the Global South countries clearly promote farmers' and community rights, their conceptualisation of these principles are fluid.

Nonetheless, the Thai CSOs' interventions were instrumental to changes in the MOC and MOAC Bills. Thailand's 1997 constitutional reform also enhanced the CSOs' calls to protect community rights. Section 46 of the 1997 Thai Constitution provides for the participation of traditional communities in the management, maintenance, preservation, and exploitation of natural resources.²³¹ To start with,

²²⁷ *ibid.*

²²⁸ *ibid.*

²²⁹ See 5.2 above for details on India's PPVFRA.

²³⁰ See Chapter 4 for details on the African Model Law.

²³¹ Constitution of the Kingdom of Thailand 1997, s 46. The 1997 Thai Constitution was significant, as there was extensive public participation in its drafting process. Indeed, it is often referred to as the 'People's Constitution.' See generally, James Klein, *The Constitution of the Kingdom of Thailand, 1997: A Blueprint for Participatory Democracy* (The Asia Foundation Working Paper Series, Working Paper 8, March 1998); Erik Martinez Kuhonta, 'The Paradox of Thailand's 1997 "People's Constitution": Be Careful What You Wish For' (May/June 2008) 48(3) *Asian Survey*

the National Drafting Committee combined the main principles in the MOC and MOAC Bills. In addition, it incorporated the community rights provisions demanded by CSOs and academic activists. Consequently, the Bill departed from the UPOV model, as the community rights provisions are not compliant with the UPOV plant breeders' rights system.²³² A Thai Parliament discussion on the Bill was held in 1998, while the final version was passed in 1999.²³³

5.2.2. Unpacking the Plant Varieties Protection Act

The PVPA protects both plant breeders' new varieties and local communities' varieties. One of the objectives of the Thai PVPA drafters was to ensure that all plant varieties within Thailand are subject to state sovereignty, and can be protected under either new or local communities' categories.²³⁴ Rather than grant exclusive IPRs over farmers' varieties as in the case of India, Thailand sought to provide another form of recognition, focusing collectively on communities' interests.²³⁵ From the discussion above, this is in line with the Thammasat Resolution.²³⁶ Provisions on the protection of new varieties are drawn from the UPOV 1978 Convention, while provisions on the protection of local communities' varieties are inspired by the CBD. Yet, like the Indian PPVFRA, the PVPA also deviates from the international agreements it borrows from.

373; Bjorn Dressel, 'Thailand's Elusive Quest for a Workable Constitution, 1997-2007' (2009) 31(2) *Contemporary Southeast Asia* 296; Kuanpoth, 'Pushing Against Globalization' (n 218) 203-04. Subsequent constitutions were introduced in Thailand in 2006, 2007, 2014, and 2017. The current Thai Constitution entered into force on 6 April 2017.

²³² Kanniah, 'Plant Variety Protection in Indonesia, Malaysia, the Philippines and Thailand' (n 213) 291.

²³³ Plant Varieties Protection Act (1999) BE 2542.

²³⁴ Daniel Robinson, *Exploring Components and Elements of Sui Generis Systems for Plant Variety Protection and Traditional Knowledge in Asia* (International Centre for Trade and Sustainable Development ICTSD 2007) 19 (*Exploring Components and Elements of Sui Generis Systems for Plant Variety Protection and Traditional Knowledge in Asia*); Daniel Robinson, 'Sui Generis Plant Variety Protection Systems: Liability Rules and Non-UPOV Systems' (2008) 3(10) *Journal of Intellectual Property Law and Practice* 659, 662 ('Sui Generis Plant Variety Protection Systems: Liability Rules and Non-UPOV Systems of Protection').

²³⁵ Robinson, *Exploring Components and Elements of Sui Generis Systems for Plant Variety Protection and Traditional Knowledge in Asia* (n 234) 19.

²³⁶ See 5.1 above for the Thammasat Resolution.

Coverage of the Law

The PVPA protects four types of plant varieties: new varieties, local domestic plant varieties, wild plant varieties, and general domestic plant varieties.²³⁷ Similar to the Indian PPVFRA, the PVPA does not expressly define new varieties.²³⁸ The new varieties are required to meet UPOV-styled DUS conditions for registration.²³⁹ However, Section 14 of the PVPA specifies that only plants published in the Government Gazette by the Minister of Agriculture and Cooperatives, with the approval of the Plant Variety Protection Commission, are eligible for protection under the PVPA.²⁴⁰ Thus, similar to the Indian PPVFRA, the PVPA does not extend protection to all genera and species. The Minister of Agriculture and Cooperatives can exempt the protection of certain genera or species on the basis of their importance to national security.²⁴¹ This way, the PVPA differs from the UPOV 1978 and 1991 Conventions. Article 4 of the UPOV 1978 Convention provides for member states to extend protection to at least 24 genera or species within eight years of UPOV membership,²⁴² while Article 3 of the UPOV 1991 Convention obliges new UPOV members to protect all plant genera and species within 10 years of accession to the Convention.²⁴³

As will be seen next, the other three varieties recognised under the PVPA are extant varieties; that is, varieties that already exist in Thailand. Local domestic plant varieties are varieties that exist only in a particular locality within Thailand, which have never been registered as a new plant variety.²⁴⁴ Section 3 of the PVPA further defines a locality as ‘a group of people residing and commonly inheriting and passing over culture continually and registered under this Act.’²⁴⁵ However, determining the origin of local plant varieties could raise conflicts, as many local

²³⁷ PVPA, chs III, IV, and V.

²³⁸ See 5.1.2 above for details on the Indian PPVFRA.

²³⁹ PVPA, ss 11 and 12.

²⁴⁰ PVPA, s 14.

²⁴¹ PVPA, s 14.

²⁴² UPOV 1978 Convention, art 4.

²⁴³ UPOV 1991 Convention, art 3.

²⁴⁴ PVPA, ss 3 and 43.

²⁴⁵ PVPA, s 3.

plant varieties are found in more than one community.²⁴⁶ For example, even though Jasmine rice (the most well-known variety of this is *Khao Dawk Mali 105*) was said to have been found in Chonburi Province, southeast of Bangkok, about 100 years ago, it spread to the Chachoengsao, the next province north for cultivation. The variety was spread further to the northeast, Issan region. It is now extensively cultivated nationwide.

Wild plant varieties are those that currently exist or have previously existed in natural habitats within Thailand and which have not been commonly cultivated, while general domestic varieties are commonly exploited plant varieties that originate from or exist in Thailand.²⁴⁷ Section 3 of the PVPA clarifies that general domestic varieties include plant varieties that are not new plant varieties, local domestic plant varieties, or wild plant varieties.²⁴⁸

Conditions for Protection

Sections 11 and 12 of the PVPA provide conditions for the protection of new varieties. As highlighted above, the PVPA provides for UPOV-styled conditions of (commercial) novelty, DUS.²⁴⁹ Like its Indian counterpart, the PVPA tailors the ‘distinctiveness’ condition to suit domestic agronomic and medicinal interests. A variety is considered distinct if the distinguishing quality is beneficial to the cultivation, consumption, pharmaceutical use, production, or transformation of the variety.²⁵⁰ These extra qualifications differ from the UPOV 1991 Convention, which simply provides that a ‘variety is deemed to be distinct if it is clearly distinguishable from any other variety whose existence is a matter of common knowledge at the time of the filing of the application.’²⁵¹ In addition, the PVPA

²⁴⁶ Robinson, *Exploring Components and Elements of Sui Generis Systems for Plant Variety Protection and Traditional Knowledge in Asia* (n 234) 28-29; Pawarit Lertdhamtewe, ‘Protection of Plant Varieties in Thailand’ (2014) 17(5-6) *The Journal of World Intellectual Property* 142, 145-46.

²⁴⁷ PVPA, s 3.

²⁴⁸ PVPA, s 3.

²⁴⁹ PVPA, ss 11 and 12.

²⁵⁰ PVPA, s 12.2.

²⁵¹ UPOV 1991 Convention, art 7. See also Chapter 3 for details on the UPOV Conditions for Protection.

introduces novel conditions such as disclosure of origin which is absent in the conditions for registration in both the UPOV 1978 and 1991 Conventions.²⁵² Section 19(3) of the PVPA requires applicants to disclose details of the genetic materials used in breeding the new varieties.²⁵³

Similar to new varieties, local domestic plant varieties are required to fulfil the DUS conditions, however, unlike new varieties, the local domestic varieties are not required to be (commercially) novel.²⁵⁴ Section 44 of the PVPA further provides that a member of a community involved in the conservation or development of a local domestic plant variety can register the local domestic plant variety on behalf of the community.²⁵⁵ Farmers' groups or co-operatives are also entitled to apply for registration of local domestic varieties on behalf of communities.²⁵⁶ However, Section 46 of the PVPA provides that the application for registration of local domestic varieties shall be in accordance with the rules and procedures prescribed in the Ministerial Regulation. This Ministerial Regulation is yet to be passed, as such no local domestic variety has been registered in Thailand.²⁵⁷ Accordingly, in addition to issues about determining the exact origin of a local domestic variety, another hurdle to registering local domestic varieties is the absence of an enforcing regulation.

²⁵² See Chapter 3 for details on disclosure of origin, which is currently under negotiation at the World Intellectual Property Organisation (WIPO).

²⁵³ PVPA, s 19.3.

²⁵⁴ This is inferred from the definition of plant varieties in Section 11 of the PVPA, which requires all plant varieties under the Act to meet the distinctiveness, uniformity, and stability (DUS) conditions (however, wild plant varieties are exempt from the 'uniformity' condition). See also Pawarit Lertdhamtewe, 'Plant Variety Protection in Thailand: The Need for a New Coherent Framework' (2013) 8(1) *Journal of Intellectual Property Law and Practice* 33, 39.

²⁵⁵ PVPA, s 44. The application is required to contain the following information: (i) the plant variety jointly conserved or developed and the method of its conservation or development; (ii) the names of members of the community; and (iii) the landscape together with a concise map showing the boundary of the community and adjacent areas.

²⁵⁶ PVPA, s 45.

²⁵⁷ Thailand has not passed a Ministerial Regulation for the procedure for registering local domestic plant varieties as required in Section 44 of the PVPA. No local domestic variety has been registered in Thailand as of 1 August 2017. See also Pawarit Lertdhamtewe, 'Thailand's Sui Generis System of Plant Variety Protection' (Paper Presented at South Asia Watch on Trade, Economics and Environment in Kathmandu, Nepal, 2 August 2017).

While general domestic plant varieties are also required to fulfil the DUS conditions similar to new plant varieties and local domestic varieties above, wild plant varieties are only required to fulfil the ‘distinct’ and ‘stable’ conditions.²⁵⁸ In other words, wild plant varieties are exempted from fulfilling the ‘uniformity’ condition.²⁵⁹ Furthermore, would-be users of general domestic varieties and wild plant varieties are required to ‘obtain permission from the competent government official and to make a profit-sharing agreement’ as will be seen below.²⁶⁰

Scope of Protection

The PVPA provides varying durations for the protection of new plant varieties. Section 31 of the PVPA provides 12 years’ protection for plant varieties cultivated in two years or less, 17 years’ protection for plant varieties cultivated in over two years, and 27 years’ protection for trees.²⁶¹ The 12 and 17-year duration is below the UPOV 1991 Convention threshold of at least 20 years’ protection, while the 27-year provision for trees is higher than the 25-year duration under the UPOV 1991 Convention.²⁶² As Pawarit Lertdhamtewe points out, the reason for the lower duration of protection in the PVPA may be to limit the length of monopoly breeders have over plant varieties, which are a main source of food.²⁶³ Nonetheless, he also argues that the lower duration of breeder’s rights in the PVPA may discourage breeders from investing in breeding new plant varieties.²⁶⁴ This is because breeding a new plant variety is a time-consuming process, as it takes about 10 years to develop a marketable variety.²⁶⁵ Thus, plant breeders may consider the 12 or 17-year period of protection as too short to recoup their research and development (R

²⁵⁸ PVPA, s 11.

²⁵⁹ PVPA, s 11.

²⁶⁰ PVPA, s 52.

²⁶¹ PVPA, s 31.

²⁶² UPOV 1991 Convention, art 19.

²⁶³ Lertdhamtewe, ‘Protection of Plant Varieties in Thailand’ (n 246) 150; Parawit Lertdhamtewe, ‘Developing Country Sui Generis Options: Thailand’s Sui Generis System of Plant Variety Protection’ (Quaker United Nations Office 2014) 3 Briefing Paper: Food, Biological Diversity and Intellectual Property 1, 3.

²⁶⁴ Lertdhamtewe, ‘Protection of Plant Varieties in Thailand’ (n 246) 150.

²⁶⁵ On plant breeding, see generally, Robert W Allard, *Principles of Plant Breeding* (2nd edn, John Wiley & Sons Inc 1999); Noel Kingsbury, *Hybrid: The History and Science of Plant Breeding* (The University of Chicago Press 2009).

& D) investments. Following from this, the higher duration of protection for new trees could incentivise R & D investments for new trees.

Under Section 33 of the PVPA, the holder of a new plant variety has the exclusive right to produce, sell, distribute, import, or export the propagating material of the new plant variety.²⁶⁶ In other words, the PVPA grants exclusive monopolies over new varieties similar to the UPOV 1991 Convention.²⁶⁷ These exclusive rights are subject to exceptions such as use of new varieties for (i) education, study, experiments, or research, (ii) acts relating to a protected new plant variety committed in good faith; and (iii) non-commercial purposes.²⁶⁸ Furthermore, farmers are allowed to save and reuse seed from harvested protected plant varieties.²⁶⁹ However, the exceptions in the PVPA do not address issues such as essentially derived varieties.²⁷⁰ Where a protected variety is used as an initial source to develop a new variety which is subsequently commercialised, does the holder of the initial variety derive any benefits? In addition, noticeably absent under the exceptions to breeder's rights is farmers' ability or rights to exchange or sell farm-saved seeds of protected varieties. As previously discussed, the Indian PPVFRA provides for farmers to sell farm-saved seeds of protected varieties, provided they are unbranded.²⁷¹ The right to sell farm-saved seeds is also one of the provisions Global South activists pushed for in the ITPGRFA.²⁷²

For local domestic plant varieties, Section 47 of the PVPA provides that local communities have 'exclusive rights to develop, study, conduct an experiment or research in, produce, sell, export or distribute by any means the propagating materials' of these varieties, similar to breeders' of new plant varieties as mentioned above.²⁷³ Section 48 of the PVPA further provides that access to local

²⁶⁶ PVPA, s 33.

²⁶⁷ UPOV 1991 Convention, art 14.

²⁶⁸ See generally Section 33 of the PVPA for the limitations to the exclusive rights to new varieties.

²⁶⁹ Provided farmers do not cultivate more than three times of the initial quantity of protected varieties obtained. PVPA, s 33.4.

²⁷⁰ The Indian PPVFRA above provides for essentially derived varieties. See also discussions on essentially derived varieties under UPOV in Chapter 3.

²⁷¹ See 5.2 above.

²⁷² See Chapter 3.

²⁷³ PVPA, s 47.

domestic varieties is subject to a profit-sharing agreement, which must be concluded with a representative of the local community whose local domestic plant variety is collected, procured, or gathered for the purposes of variety development, education, experiment or research for commercial interests.²⁷⁴ These profits go directly to the local communities providing the varieties.²⁷⁵ Nonetheless, local communities' exclusive IPRs over their local domestic varieties are subject to similar limitations like breeders' of new varieties mentioned in the preceding paragraph,²⁷⁶ albeit with the exception of acts related to education and experiments.²⁷⁷

Conversely, the scope of protection granted for wild plant varieties and general domestic plant varieties are akin to access and benefit sharing principles, not exclusive IPRs provided for new plant varieties and local domestic plant varieties as mentioned above. Section 52 of the PVPA provides that anyone who desires access to wild plant varieties or general domestic plant varieties for commercial purposes is required to obtain permission from the competent national official.²⁷⁸ Access to wild plant varieties and general domestic varieties is also subject to a profit-sharing agreement which states *inter alia*, the purpose for collecting the plant variety and the amount of profit-sharing agreed.²⁷⁹ The amount agreed on for the use of the plant variety is then transferred to a plant varieties protection fund (PVP Fund).²⁸⁰ The money in the PVP Fund is used to assist communities with the conservation, research, and development of plant varieties.²⁸¹ One advantage of protecting wild plant varieties and general domestic plant varieties using access

²⁷⁴ PVPA, s 48.

²⁷⁵ 20 per cent of the profits are allocated to the persons who conserve or develop the plant variety, 60 per cent to the community as its common revenue, and 20 per cent to the local government organisation, the farmers' group or the co-operative that makes the agreement. The profit-sharing is also required to be in accordance with any profit-sharing regulations established under the PVPA. See PVPA, s 49.

²⁷⁶ PVPA s 47.

²⁷⁷ Section 47 of the PVPA does not include the education and experimentation exceptions. In contrast, these limitations apply to breeders' rights over new plant varieties as stated in Section 33 of the PVPA.

²⁷⁸ PVPA, s 52.

²⁷⁹ See other conditions of the benefit sharing agreement in Section 52 of the PVPA.

²⁸⁰ PVPA, s 52.

²⁸¹ PVPA, s 55.

and benefit sharing principles is that it avoids the conflicts that may arise in determining the owners of these varieties, which may occur in the case of local domestic varieties. Yet, a challenge with the access and benefit sharing approach is the fair and equitable distribution of funds to farmers and farming communities.²⁸²

In sum, the PVPA is a creative *sui generis* system that protects both new and existing varieties in Thailand. As of September 2017, the Thai Plant Variety Protection Division had received 1,354 applications for new plant variety registration, and registered 453 plant varieties.²⁸³ Notably, despite special provisions in the PVPA such as the protection of local domestic varieties, wild plant varieties, and general domestic varieties which are non-UPOV compliant, Thailand is rethinking its UPOV membership. As will be seen below, Thailand's contact and engagement with UPOV resumed in 1999, the same year the PVPA entered into force.

5.2.3. Rethinking UPOV Membership and Trade Agreements

A sampling of Thailand and UPOV's interactions since the PVPA entered into force in 1999 demonstrates efforts from both parties to push Thailand the UPOV way. To start with, the Thai Plant Variety Protection office contacted the UPOV office in 1999 to ask about the procedure for becoming a UPOV member.²⁸⁴ Although no progress was made after the initial contact, eight years later – on 28 March 2007 – the Department of Intellectual Property (DOIP) visited UPOV to request for information about the principles and impact of the UPOV

²⁸² Robinson, 'Sui Generis Plant Variety Protection Systems: Liability Rules and Non-UPOV Systems of Protection' (n 234) 663.

²⁸³ The Plant Variety Protection Office has granted the highest number of varieties to maize: which has 109 registered varieties. Thanks to Panipat Kritsamak: Agricultural Technical Officer, Plant Variety Protection Office MOAC, for the up-to-date information about the applications received and registered varieties in Thailand (September 2017).

²⁸⁴ UPOV, 'Annual Report of the Secretary-General for 1999, Council Thirty-Fourth Ordinary Session, Geneva, 26 October 2000' (C/34/2, 16 March 2000) 19
<http://www.upov.int/edocs/mdocs/upov/en/c/34/c_34_2.pdf> accessed 22 August 2017.

Convention.²⁸⁵ The DOIP also explored the possibilities of a national workshop on a UPOV plant breeder's rights system in Bangkok. Accordingly, on 22 June 2007, the UPOV office with support from the DOIP organised a briefing session at the DOIP to sensitise stakeholders, including Thai officials, academics, and CSOs, about the UPOV plant breeders' rights system.²⁸⁶ Furthermore, on 4 and 5 July 2007, the UPOV office met with officials of the MOAC and National Cultural Commission of Thailand to discuss the benefits of the UPOV plant breeders' rights system.²⁸⁷ Notably, the UPOV office lists Thailand as one of the countries that has contacted it for assistance to develop a national plant variety protection law in line with the UPOV Convention.²⁸⁸

Apart from the above direct UPOV office engagements with Thailand, another attempt to push Thailand the UPOV way has been through trade agreements. The US launched Free Trade Agreement (FTA) negotiations with Thailand in 2003, which included the requirement for Thailand to accede to the UPOV 1991 Convention.²⁸⁹ Similarly, the EU launched FTA negotiations with Thailand in

²⁸⁵ This meeting was held on 28 March 2007. UPOV, 'Report on Activities During the First Nine Months of 2007, Council Forty-First Ordinary Session, Geneva, 25 October 2007' (C/41/13, 4 October 2007) 6 <http://www.upov.int/edocs/mdocs/upov/en/c/41/c_41_03.pdf> accessed 22 August 2017 ('Report on Activities During the First Nine Months of 2007').

²⁸⁶ The briefing session was held on 22 June 2007. Also, the 8th Asian Regional Technical Meeting for Plant Variety Protection took place from 25 to 29 June 2007 in Thailand. UPOV provided 49 of the 81 participants the opportunity to take the UPOV Distance Learning Course DL-205. UPOV, 'Report on Activities during the First Nine Months of 2007' (n 285) 6.

²⁸⁷ The meetings were held on 4 and 5 July 2007. UPOV, 'Report on Activities during the First Nine Months of 2007' (n 285) 8.

²⁸⁸ UPOV, 'Status in Relation to the International Union for the Protection of New Varieties of Plants as of 20 March 2017' <<http://www.upov.int/export/sites/upov/members/en/pdf/status.pdf>> accessed 23 August 2017.

²⁸⁹ Office of the United States Trade Representative, 'United States and Thailand Conclude Fourth Round of FTA Talks' (Archive, 15 July 2005)

<https://ustr.gov/archive/Document_Library/Press_Releases/2005/July/United_States_Thail_Conclude_Fourth_Round_of_FTA_Talks.html> accessed 23 August 2017; Raymond J Ahearn and Wayne M Morrison, 'US – Thailand Free Trade Agreement Negotiations' (Congressional Research Service-CRS Report for Congress, Updated 26 July 2006) <<http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL32314.pdf>> accessed 23 August 2017. See also Jakkrit Kuanpoth, Jiraporn Limpananont, Kingkorn Narintarakul, Benja Silarak, Supanee Taneewuth, Witoon Lianchamroon, Jacques-Chai Chomthongdi, Saree Aongsomwang, and Niramom Yuwanaboon, 'Free Trade Agreements: Impact in Thailand' (FTA Watch, June 2005) 31 <http://www.thailaws.com/law/e_laws/freetrade/ImpactFTAinThailand.pdf> accessed 23 August 2017.

2013 which also require Thailand to accede to the UPOV 1991 Convention.²⁹⁰ However, the FTA negotiations have stalled for a variety of reasons, including political instability in Thailand and CSO opposition.

The vibrant CSOs in Thailand such as BIOTHAI have remained vigilant in countering attempts to push Thailand the UPOV way through UPOV office lobbying and FTA negotiations. As will be seen next, the CSOs have challenged the UPOV membership through public protests and policy briefs. Two examples of CSO-led public protests occurred in 2006 and 2013. In January 2006, during the 6th round of the US-Thai FTA negotiation, about 15,000 to 20,000 people, including CSOs from both the agriculture and health sectors, protested the IPRs section of the FTA on the streets of Chang Mai, where the negotiations were held, disrupting the meeting.²⁹¹ The 2013 protest held in Bangkok, though less attended, was equally as effective. In November 2013, about 30 CSOs representatives protested the Thai government's moves to accede to the UPOV 1991 Convention in a demonstration at the MOAC.²⁹² The CSOs submitted a petition to Martin Ekvad, the Chairperson of the UPOV Administrative and Legal Committee, who had presented a lecture on the benefits of UPOV in Thailand to Thai officials at the MOAC.²⁹³ In the CSOs' words:

The main terms of the 1991 UPOV Convention will have an impact on the small-scale farmers and will abuse the rights of farmers, in contravention of sovereign rights of the country over the genetic resources. It would facilitate the monopolisation of the large seed corporations, and impose impacts for the biological diversity and food security of Thailand over the longer term. We hereby declare that the networks of small-scale farmers in

²⁹⁰ 'European Commission Trade, Countries and Regions: Thailand'

<http://ec.europa.eu/trade/policy/countries-and-regions/countries/thailand/index_en.htm> accessed 23 August 2017.

²⁹¹ BIOTHAI, 'Fighting FTAs: The Experience in Thailand' (October 2007)

<<http://www.bilaterals.org/IMG/pdf/fightingFTA-en-Hi-2-b-experience-in-thailand.pdf>> accessed 23 August 2017.

²⁹² GRAIN, 'Thai Farmers and Civic Groups Protest UPOV Lobby' (19 November 2013)

<https://www.grain.org/bulletin_board/entries/4833-thai-farmers-and-civic-groups-protest-upov-lobby> accessed 23 August 2017 ('Thai Farmers and Civic Groups Protest UPOV Lobby').

²⁹³ *ibid.*

Thailand, the civil society organisations and FTA Watch will mobilise to oppose UPOV 1991 to the utmost, and in particular to the pressure on Thailand to join this Convention as part of the negotiations towards an FTA between the European Union and Thailand.²⁹⁴

In addition to the protests, the CSOs such as BIOTHAI have prepared policy briefs and publications to circulate knowledge about the Thai government's UPOV activities or developments.²⁹⁵ It can be concluded that these CSOs interventions have contributed to maintaining the plant variety protection *status quo* in Thailand.

5.3. Conclusion

This chapter presents a TWAIL and regime complex analysis of India and Thailand's creative *sui generis* plant variety protection systems. The chapter locates the Indian and Thai plant variety protection systems in the historical and politico-economic contexts in which they emerged. It further analyses the law-making process through which the plant variety protection systems were introduced, as well as the substantive provisions set out in the systems. The law-making and laws in both countries demonstrate the contestations between actors and the successful weaving together of the conflicting legal systems and principles relevant to plant varieties. For example, both pro-UPOV plant breeders' rights and pro-farmers' rights actors were actively involved in the law-making processes in India and Thailand. Furthermore, alongside protecting new varieties, India protects farmers' varieties and extant varieties, while Thailand protects local domestic varieties, wild plant varieties, and general domestic varieties.

²⁹⁴ Letter to the Chairman of UPOV 1991, Signed by the BIOTHAI Foundation, Alternative Agriculture Network, Seed Freedom Thailand, The Foundation for Knowledge Management and Farmer School Network of Nakhon Sawam province, Food Security Network Satingphra, Network of Fish Folks, Phang-nga Bay, The Network for Change in the East, and the FTA Watch (18 November 2013) (letter available on record with the author).

²⁹⁵ See for example, BIOTHAI, 'Impacts of the Thai-EU Free Trade Agreement on Plant Varieties, Biodiversity and Food Security' (22 February 2015) <<http://biothai.org/node/535>> accessed 23 August 2017; BIOTHAI, 'Warming to Thai Government: Stop Meddling with the Plant Protection Laws' (11 April 2016) <<http://www.biothai.org/node/1421>> accessed 23 August 2017; BIOTHAI, 'Impacts for Farmers and Consumers of Amending the Plant Varieties Protection Act' (11 April 2016) <<http://www.biothai.org/node/1422>> accessed 23 August 2017.

The chapter has argued that the incorporation of these alternative provisions in India and Thailand were thanks to the vibrant CSOs in both countries. This is important to this thesis because it shows the significance of the active presence of domestic CSOs in influencing and shaping plant variety protection laws and law-making. By strategically circulating ideas about farmers' rights, the CSOs were able to translate the Global South common position at the TRIPS Council into national law. Although India and Thailand are ethnically diverse countries like Nigeria, deep-rooted influences, particularly the Gandhi *Satyagraha* in India alongside the Sufficiency Economy philosophy and New Agriculture theory in Thailand, unified the CSOs.

Furthermore, the Indian and Thai CSOs' vigilance have contributed to maintaining the creative *sui generis* plant variety protection systems in these countries despite growing pressures to join UPOV. In other words, while India and Thailand experienced similar pressures from trade agreements, seed companies, and UPOV office lobbies – which pushed African countries towards UPOV as seen in Chapter 4 – one distinguishing feature of India and Thailand's plant variety protection systems is their CSOs' interventions. Overall, the insights from this chapter – combined with insights from Chapter 4 – help to answer the subsidiary research question about factors that influence the variations in plant variety protection systems in the Global South. More importantly, the findings from both chapters provide useful lessons for Nigeria because it is yet to introduce a plant variety protection system.

The next chapter – which is the penultimate chapter of this thesis – revisits the Nigerian case study. It will analyse the Nigerian case study in the context of the findings from Chapter 4 (factors that influenced UPOV membership within Africa) and findings from this chapter (factors that influenced creative *sui generis* plant variety protection systems in India and Thailand). Furthermore, the chapter will unpack Nigeria's Industrial Property Commission (IPC) Bill. Drawing from lessons of other Global South countries (in Chapters 4 and this chapter), along with empirical study conducted in Nigeria, the next chapter provides original insights

into the historical and politico-economic context that contribute to the plant variety *status quo* in Nigeria; it also explores how to design the *sui generis* system suited to it. This way, the next chapter attempts to answer the second central question of this thesis concerning the design and introduction of the *sui generis* plant variety protection system suited to Nigeria.

Chapter 6

Towards Plant Variety Protection in Nigeria

This chapter builds on the background set out in Chapter 2 in order to provide a deeper analysis of the plant variety protection in Nigeria. To start with, the chapter explores the pre-TRIPS, during TRIPS, and post-TRIPS plant variety protection landscape in Nigeria. Second, it analyses the Nigerian plant variety protection landscape in the context of the key factors which influence variations in plant variety protection systems in the Global South as teased out in Chapters 4 and 5. These factors include trade agreements, regional associations, pressure from seed companies, UPOV office lobbies, alongside civil society activism. Third, it unpacks the plant variety protection provisions in Nigeria's Industrial Property Commission (IPC) Bill.¹ Analysing plant variety protection in this regard helps us understand the current plant variety protection *status quo* in order to consider how to design and introduce the system best suited to Nigeria. As such, this chapter addresses the second central research question posed in this thesis.

The application of the TWAIL insights on the broad historical and politico-economic context that shape law-making and laws in the Global South, combined with regime complex theory insights on actors' strategies to relocate rulemaking, enrich the analysis presented in this chapter. This is because the TWAIL and regime complex analysis show that the focus on laws and policies alone are not enough to understand the implementation of the obligation to protect plant varieties under Article 27.3(b) of TRIPS in Nigeria. The chapter finds that while India, Thailand, and the African Group were debating and developing *sui generis* plant variety protection systems in the early 1990s, Nigeria was under military regime, and fulfilling international obligations was not a priority. In addition, civil society organisations (CSOs) that contributed to the cognitive shaping of *sui generis* plant

¹ 'A Bill for an Act to Provide for the Establishment of the Intellectual Property Commission of Nigeria, Repeal of Trademarks Act Cap. T13, LFN 2004 And Patents And Designs Act, Cap. P2, LFN 2004 and Make Comprehensive Provisions for the Registration and Protection of Trademarks, Patents and Designs, Plant Varieties, Animal Breeders and Farmers Rights and For Other Related Matters' (IPC Bill).

variety protection systems in India and Thailand were silent in Nigeria during that period. However, it is argued that the CSOs' silence in the 1990s can also be linked to the absence of pro-UPOV plant breeder's rights pressures in Nigeria. In other words, there were no actors pushing for or circulating ideas about plant breeder's rights for the CSOs to counterbalance. Nonetheless, it is important to note that the CSOs in Nigeria's agriculture sector have limited awareness about plant variety protection-related issues.

The chapter further finds that while Nigeria does not have direct pressure from regional associations, seed companies, or the UPOV office to design a plant variety protection system, it is party to the G8 New Alliance for Food Security and Nutrition (NAFSN), a trade agreement which requires it to reform its seed law. In fact, this is a symptom of the regime complex theory which reflects how powerful or industrialised Global North state actors such as the United States (US) or the European Union (EU) shift from multilateral agreements such as TRIPS to bilateral and regional trade and investment agreements –otherwise referred to as vertical regime shifting.² According to Laurence Helfer, Global North actors could leverage their economic and political clout in the intimate bilateral negotiating forums to demand that Global South countries accede to certain intellectual property (IP) standards that exceed those found in TRIPS, which are labelled 'TRIPS plus' agreements.³ However, Nigeria did not specifically commit to introduce a plant variety protection system under the NAFSN. Rather, it generally committed to introduce seed laws that facilitate private sector-led agricultural

² Peter K Yu, 'International Enclosure, the Regime Complex, and Intellectual Property Schizophrenia' (2007) 1 Michigan State Law Review 1, 15-16; Laurence R Helfer, 'Regime Shifting in the International Intellectual Property System' (2009) 7(1) Perspectives on Politics 39, 41 ('Regime Shifting in the International Intellectual Property System')

³ Helfer, 'Regime Shifting in the International Intellectual Property System' (n 2) 41. See also Genetic Resources Action International Network (GRAIN), 'TRIPS-Plus through the Back Door: How Bilateral Treaties Impose much Stronger Rules for IPRs on Life than the WTO' (27 July 2001) <<https://www.grain.org/article/entries/5-trips-plus-through-the-back-door>> accessed 13 December 2016; GRAIN, 'Bilateral Agreements Imposing TRIPS-plus Intellectual Property Rights on Biodiversity in Developing Countries' (08 April 2008) <<https://www.grain.org/fr/article/entries/3645-bilateral-agreements-imposing-trips-plus-intellectual-property-rights-on-biodiversity-in-developing-countries>> accessed 28 August 2017.

growth. Nonetheless, the absence of direct pressures and debates does not mean there are no developments in plant variety protection law-making in Nigeria.

The IPC Bill which contains a section on plant variety protection is currently being processed in Nigeria's National Assembly.⁴ The plant variety protection part of the IPC Bill, as in the other intellectual property rights (IPRs) Bills previously proposed in Nigeria, is drawn from the African Model Law. However, the IPC Bill excludes certain key exceptions to breeder's rights and farmers' rights provisions, which is detrimental to both small-scale farmers and national interests in general as was discussed in Chapter 3. Yet, there are no public debates about the plant variety protection provisions in the IPC Bill in Nigeria. This is important because insights from Chapters 4 and 5 show the differences between plant variety protection systems in the Global South designed with and without public debates or discussions. Chapter 4 shows that the African Intellectual Property Organisation (OAPI) designed its UPOV 1991 Convention-compliant plant variety protection system without public debates or discussions,⁵ while Chapter 5 shows that India and Thailand's creative *sui generis* plant variety protection systems were designed following public debates or discussions on the subject.⁶ In fact, Chapter 5 shows that CSOs' circulation of ideas and knowledge about farmers' rights contributed to the shaping of India and Thailand's creative *sui generis* systems. As this thesis proposes a creative *sui generis* system as best suited to Nigeria (in answer to the first central research question), it is important to draw attention to the lack of public debates or discussions in this regard.

The discussions in this chapter are divided into three parts. Part I explores pre-TRIPS, during TRIPS, and post-TRIPS periods in Nigeria. This exploration unmask how seemingly unconnected historical and politico-economic issues have

⁴ The Bill was presented by Honourable Chime Oji Agu at the House of Representatives of Nigeria's National Assembly on 8 June 2016. The second reading of the Bill was on 18 January 2017. The Bill has now been referred to the House Committee on Commerce. IPC Bill (n 1).

⁵ Annex X: 'Plant Variety Protection' in the Agreement Revising the Bangui Agreement of 2 March 1977 on the Creation of an African Intellectual Property Organisation (Bangui Central African Republic, 24 February 1999).

⁶ The public debates and discussions were through workshops, seminars, rallies, and the media.

contributed to the absence of a plant variety protection system in Nigeria. Part II analyses the factors that influence variations in plant variety protection in the Global South within the Nigerian context. Part III examines the coverage of the law, conditions for protection, and scope of protection set out in the IPC Bill.

6.1. Historical Evolution of Plant Variety Protection in Nigeria

Chapter 2 already sets out the background on farming in Nigeria.⁷ To recap, over 80 per cent of farmers in Nigeria are small-scale farmers who depend on the informal seed sector. The small-scale farmers source over 90 per cent of their seeds from the informal seed sector.⁸ Both public institutions and private seed companies are involved in plant breeding in Nigeria. Private sector participation surged especially from 2011 as a result of changes in Nigeria's agricultural policies. Similar to India and Thailand, agriculture plays a significant role in Nigeria; it employs over 30 per cent of its labour force.⁹ Agriculture also contributed 21.1 per cent to Nigeria's GDP in 2016.¹⁰ Major crops grown in Nigeria include maize, sorghum, wheat, cassava, and rice. In fact, Nigeria is the world's largest producer of cassava and one of the largest producers of rice within Africa.¹¹

Pre-TRIPS

Like India, Nigeria was colonised by Britain.¹² Although the British colonial administration – from 1861 to 1960 – did not establish a plant variety protection

⁷ See generally Chapter 2.

⁸ However, it is important to note that the percentage of farmers' seed sources and contribution to the seed sector varies depending on the crop.

⁹ The World Bank, 'Employment in Agriculture (% of total employment)' (2010) <<https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=NG>> accessed 28 August 2017.

¹⁰ The World Bank, 'Agriculture, Value Added: % of GDP' (2016) <<https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=NG>> accessed 28 August 2017.

¹¹ Food and Agriculture Organisation of the United Nations (FAO), 'Nigeria at a Glance' <<http://www.fao.org/nigeria/fao-in-nigeria/nigeria-at-a-glance/en/>> accessed 28 August 2017; FAO, 'FAOSTAT, Crops: Production Quantities of Cassava by Country' <<http://www.fao.org/faostat/en/#data/QC/visualize>> accessed 28 August 2017.

¹² See Chapter 5.

system in Nigeria, it introduced noteworthy changes which shaped Nigeria's agriculture sector. The earliest British involvement in the agricultural sector was the establishment of the Department of Botanical Research (DBR) in 1893, in the former Western Nigeria.¹³ The DBR was part of a network of research institutes introduced in British colonies to conduct agricultural research. In 1905, the British Cotton Growers' Association established a site known as Moor Plantation, also located in the former Western Nigeria, to grow cotton for the British Textile Mills. The Moor Plantation became the headquarters of the Department of Agriculture in Southern Nigeria in 1910.¹⁴ Two years later, in 1912, a similar Department of Agriculture was established in Northern Nigeria.¹⁵ After the amalgamation of Northern and Southern Nigeria in 1914, a unified Department of Agriculture was formed in Nigeria in 1921.¹⁶ The Department of Agriculture focused on increasing the production of export crops for the British market to promote Britain's industrial growth.¹⁷

The first comprehensive Agricultural Policy introduced by the British administrators in 1946 divided Nigeria into five agricultural areas (i) Northern provinces pastoral or livestock production area; (ii) Northern provinces export crop (groundnut and cotton) production area; (iii) Middle Belt food production area; (iv) Southern provinces export crop (palm oil and kernels) production area; and (v)

¹³ FAO, 'Plant Breeding Programs in Nigeria' <<http://www.fao.org/in-action/plant-breeding/our-partners/africa/nigeria/en/>> accessed 30 August 2017.

¹⁴ Montague Yudelman, 'Imperialism and the Transfer of Agricultural Techniques' in Peter Duignan and Lewis H Gann (eds), *Colonialism in Africa 1870-1960: Volume Four, The Economics of Colonialism* (Cambridge University Press 1975) 347 ('Imperialism and the Transfer of Agricultural Techniques').

¹⁵ *ibid.*

¹⁶ The Southern and Northern British protectorates were amalgamated to form one country – 'Nigeria' – in 1914, under Lord Lugard's administration. See generally, Benjamin Nwabueze, *A Constitutional History of Nigeria* (C. Hurst & Co (Publishers) Ltd 1982); Federal Republic of Nigeria, 'History of Nigeria' <<http://www.nigeria.gov.ng/index.php/2016-04-06-08-38-30/history-of-nigeria>> accessed 25 August 2017.

¹⁷ See generally, Gerald Helleiner, *Peasant Agriculture, Government, and Economic Growth in Nigeria* (Richard Irwin Inc 1966) (*Peasant Agriculture, Government, and Economic Growth in Nigeria*); Eme Ekekwe, 'State and Economic Development in Nigeria' in Claude Ake (ed), *Political Economy of Nigeria* (Longman 1985) 58-60 ('State and Economic Development in Nigeria'); Gbolagade Ayoola, *Essays on the Agricultural Economy: A Book of Readings on Agricultural Development Policy and Administration in Nigeria, Volume 1* (TMA Publishers 2001) (*Essays on the Agricultural Economy*).

Southwest food export (cocoa and palm kernels) area.¹⁸ This division reflects the British colonial administration's primary focus on export crops such as cocoa, cotton, groundnuts, rubber, and palm produce (palm oil and palm kernels). Eme Ekekwe remarks that the colonial administration was 'interested in production for export. It encouraged or established co-operative groups and research institutions to promote cash crop production. It showed little interest in food production.'¹⁹ Notably, these export cash crops were primarily grown by small-scale farmers, using simple farming tools such as hoes, cutlasses, axes, and knives.²⁰

Nigeria maintained the focus on small-scale production of export crops established by the British colonial administration even after it gained its independence in 1960.²¹ In the 1960s, agriculture was the mainstay of the Nigerian economy and the main source of foreign revenue.²² Agriculture accounted for about 70 per cent of Nigeria's GDP and total export revenue.²³ However, Nigeria's discovery of oil in the late 1960s led to the neglect of agriculture. This further led to a food crisis manifested by increased levels of food imports by the 1970s, as there was a decline in both export cash crop and food crop production.²⁴ Following the food crisis, successive Nigerian governments introduced a series of agricultural policies, plans, and programmes which focused on agricultural modernisation principles such as mono-cropping, mechanisation, and dependence on agro-chemicals (fertilisers and

¹⁸ Ayoola, *Essays on the Agricultural Economy* (n 17) 81.

¹⁹ Ekekwe, 'State and Economic Development in Nigeria' (n 17) 58-59.

²⁰ Helleiner, *Peasant Agriculture, Government, and Economic Growth in Nigeria* (n 17) 45. For detailed discussions on small-scale farmers and the main export crops during the colonial era, see generally, Helleiner, *Peasant Agriculture, Government, and Economic Growth in Nigeria* (n 17) 76-134.

²¹ Although Nigeria became independent on 1 October 1960, it was still an independent constitutional monarchy. The Nigerian government's activities were still undertaken in the Queen's name through the Governor General of Nigeria. However, Nigeria became a republic – 'The Federal Republic of Nigeria' – in 1963. Under the republican system, there is an elected president, and the elected representatives of the people are supreme. The Queen stopped being the Queen of Nigeria, and the Constitution of the Federation Act 1963 replaced the Nigeria Independence Act 1960.

²² Eroarome Martin Aregheore, 'Country Pasture/Forage Resource Profiles: Nigeria' (FAO 2005) <<http://www.fao.org/ag/AGP/AGPC/doc/Counprof/nigeria/nigeria.htm>> accessed 18 April 2016; United Nations Conference on Trade and Development (UNCTAD), *Investment Policy Review: Nigeria* (UNCTAD, United Nations 2009) 3-4.

²³ Ekekwe, 'State and Economic Development in Nigeria' (n 17) 61; Jeremiah Dibua, *Development and Diffusionism: Looking Beyond Neopatrimonialism in Nigeria, 1962-1985* (Palgrave Macmillan 2013) 94 (*Development and Diffusionism*).

²⁴ Ekekwe, 'State and Economic Development in Nigeria' (n 17) 61.

pesticides).²⁵ Examples of the policies, plans, and programmes introduced include the National Accelerated Food Production Programme 1972, Agricultural Development Projects 1974, Operation Feed the Nation 1976, River Basin Development Authorities 1976, and Green Revolution Programme 1980.²⁶

Interestingly, the decline in the agriculture sector, which justified the introduction of agricultural modernisation principles, was attributed to the prevalence of small-scale traditional farming in Nigeria.²⁷ What this claim fails to acknowledge is that small-scale traditional farming practices were actually the key to agricultural growth from the colonial era to the 1960s. As stated in the preceding paragraph, agriculture accounted for about 70 per cent of Nigeria's GDP and export revenues in the 1960s.²⁸ Gerald Helleiner further points out that small-scale non-mechanised agriculture accounted for 95 per cent of Nigeria's total food consumption prior to the 1960s.²⁹ Notably, the promotion of agricultural mechanisation as a solution to the food crisis in Nigeria is traceable to European, US, FAO, and World Bank-sponsored agricultural modernisation programmes or green revolution programmes during this period (from the 1970s).³⁰ It was discussed in Chapter 5 that the green revolution programmes focused on the use of high yielding varieties (HYVs), and agrochemicals were also introduced in India and Thailand from the late 1960s to the 1980s.³¹

Nigeria's Green Revolution Programme introduced by President Shehu Shagari in 1980 sought to increase food production and achieve food self-sufficiency by

²⁵ Dibua, *Development and Diffusionism* (n 23) 97. Examples of these principles are highlighted in the next paragraph.

²⁶ Tom Forrest, *Politics and Economic Development in Nigeria* (Westview Press 1993) 187-202; Juliana C Iwuchukwu and Edwin M Igbokwe, 'Lessons from Agricultural Policies and Programmes in Nigeria' (2012) 5 *Journal of Law, Policy and Globalization* 11, 12-15 ('Lessons from Agricultural Policies and Programmes in Nigeria').

²⁷ Dibua, *Development and Diffusionism* (n 23) 95.

²⁸ See above.

²⁹ Helleiner, *Peasant Agriculture, Government, and Economic Growth in Nigeria* (n 17) 45.

³⁰ Dibua, *Development and Diffusionism* (n 23) 96.

³¹ See Chapter 5.

modernising the agricultural sector.³² To execute the programme, the Nigerian government supplied farmers with agricultural inputs such as fertilisers, pesticides, and improved seeds or seedlings. The government further provided incentives such as credit facilities, favourable pricing policy for agriculture products, income tax reliefs for pioneer enterprises, and duty-free imports on farm machinery for commercial firms investing in large scale farming. Following the introduction of the Green Revolution Programme in 1980, the first private seed company – Agricultural Seed Nigeria Ltd (AgSeed) – resumed operations in Nigeria in 1984.³³

However, the Green Revolution Programme failed to achieve its objectives. Two reasons for the failure of the Green Revolution Programme in Nigeria are as follows. First, requirements for planting improved varieties, including monocropping and dependence on agrochemical inputs (such as fertilisers and pesticides), were alien to small-scale farming practices.³⁴ Despite the government's dissemination of agricultural inputs including the improved varieties, small-scale farmers still relied on their traditional varieties and farming practices. Second, there were administrative shortcomings such as delays in executing the project, lack of monitoring, and evaluating the projects.³⁵ Jeremiah Dibua points out that the Green Revolution Programme, along with the other agricultural programmes focusing on modernised agricultural practices, were destined to fail because they 'completely discountenanced the historical, cultural, social, material and scientific foundations on which indigenous agriculture and agricultural practices are based.'³⁶

³² Segun Famoriyo and M Rafique Raza, 'The Green Revolution in Nigeria: Prospects for Agricultural Development' (1982) 7(1) Food Policy 27, 36; Iwuchukwu and Igbokwe, 'Lessons from Agricultural Policies and Programmes in Nigeria' (n 26) 14.

³³ Jeffery W Bentley, Olupomi Ajayi, and Kehinde Adelugba, 'Nigeria: Clustered Seed Companies' in Paul Van Mele, Jeffery Bentley, and Robert G Guei (eds), *African Seed Enterprises: Sowing the Seeds of Food Security* (FAO, the Africa Rice Centre, and CAB International 2011) 45 ('Nigeria: Clustered Seed Companies').

³⁴ Dibua, *Development and Diffusionism* (n 23) 97-98.

³⁵ Iwuchukwu and Igbokwe, 'Lessons from Agricultural Policies and Programmes in Nigeria' (n 26) 14.

³⁶ Dibua, *Development and Diffusionism* (n 23) 97-98.

As discussed in Chapter 2, the World Bank and the FAO seed sector programmes introduced in Nigeria from 1975 precipitated the introduction of the first seed law: the National Crop Varieties and Livestock Breeds Act (NCVLBA) in 1987.³⁷ Similar to India and Thailand, (i) Nigeria had also enacted a patent law during this period which prohibited patents for plant varieties, and (ii) there were also no discussions about plant variety protection in Nigeria prior to the commencement of the TRIPS negotiations.³⁸

During TRIPS Negotiations (1986-1994)

In stark contrast to India and Thailand, there were also no discussions about plant variety protection in Nigeria during the TRIPS negotiations. In other words, neither the seed companies nor CSOs pushed for a plant variety protection system in Nigeria at that time. Although foreign seed companies such as Pioneer Hi Bred Seed also commenced operations in Nigeria from the 1980s, these companies started pulling out of Nigeria by the early to mid-1990s because of the low demand for improved seeds.³⁹ Furthermore, unlike in India and Thailand, even the UPOV office did not organise seminars or programmes in Nigeria during this period.⁴⁰

Notably, Nigeria was under military regime throughout the TRIPS negotiations and fulfilling international obligations was not a priority.⁴¹ In addition, the military regime substantially curtailed CSO activities in Nigeria.⁴² This was to prevent CSOs from pushing for agendas unfavourable to the military regime. In fact, the military regime proscribed CSOs, particularly labour unions, professional

³⁷ See Chapter 2.

³⁸ See Chapter 2 on the Patents and Designs Act 1970 (PDA). See also Chapter 5 on the Pre-TRIPS period in India and Thailand.

³⁹ See Chapter 2. See also Bentley, Ajayi, and Adelugba, 'Nigeria: Clustered Seed Companies' (n 33) 50.

⁴⁰ See Chapter 5.

⁴¹ WTO Council for Trade-Related Aspects of Intellectual Property Rights, Review of Legislation on 5-7 March 2002 (8 June 2004) IP/Q/NGA/1, IP/Q2/NGA/1, IP/Q3/NGA/1, IP/Q4/NGA/1, 2-3.

⁴² For discussions on CSOs in Nigeria, see generally, Matthew Todd Bradley, 'Civil Society and Democratic Progression in Postcolonial Nigeria: The Role of Non-Governmental Organizations' (2005) 1(1) *Journal of Civil Society* 61; Darren Kew and Modupe Oshikoya, 'Escape from Tyranny: Civil Society and Democratic Struggles in Africa' in Ebenezer Obadare (ed), *The Handbook of Civil Society in Africa* (Springer 2014) 14-16.

associations, and indeed, anyone that attempted to criticise its policies or undertake public demonstrations.⁴³ For example, Oladele Giwa, a vocal investigative journalist and founding editor of Newswatch magazine, was killed after receiving a letter bomb which bore the seal of the Presidency, marked: ‘to be opened by the addressee only.’ Oladele Giwa spoke against the oppressive military regime, particularly criticising the government’s International Monetary Fund (IMF) and World Bank assisted Structural Adjustment Programme (SAP). The SAP, introduced in 1986, reformed Nigeria’s foreign exchange system, trade policies, and agricultural regulations.⁴⁴

The Nigerian government introduced the SAP because the oil boom, following the discovery of oil in the late 1960s, was short-lived. By the 1980s, there was a sharp fall in international oil prices, and Nigeria’s export revenues fell with it.⁴⁵ Meanwhile, with the discovery of oil, the Nigerian government neglected the agriculture sector to depend on oil revenue – a quintessential case of the Dutch disease.⁴⁶ As discussed in the preceding section, the Nigerian governments had introduced capital-intensive agricultural policies, plans, and programmes from the 1970s. With the fall in oil prices, Nigeria’s primary source of revenue declined, thus the SAP was introduced to address the challenges posed by the fall in oil revenues and to steer the economy on the path of steady growth.⁴⁷ It aimed to reduce public sector dominance and intensify the growth potentials of the private

⁴³ Remi Aiyede, ‘The Dynamics of Civil Society and the Democratization Process in Nigeria’ (2003) 37(1) *Canadian Journal of African Studies* 1, 7.

⁴⁴ For SAP in Nigeria, see generally, John Anyanwu, ‘President Babangida’s Structural Adjustment Programme and Inflation in Nigeria’ (1992) 7(1) *Journal of Social Development in Africa* 5; Paul Mosley, ‘Policy-Making without Facts: A Note on the Assessment of Structural Adjustment Policies in Nigeria 1985-1990’ (1992) 91(363) *African Affairs* 227; Adebayo Olukoshi (ed), *The Politics of Structural Adjustment in Nigeria* (James Curry Ltd 1993); The World Bank, ‘Nigeria - Structural Adjustment Program: Policies, Implementation, and Impact’ (World Bank Report No 13053-UNI, 13 May 1994) <<http://documents.worldbank.org/curated/en/959091468775569769/pdf/multi0page.pdf>> accessed 29 August 2017 (‘Nigeria - Structural Adjustment Program’).

⁴⁵ The World Bank, ‘Nigeria - Structural Adjustment Program’ (n 44) vii.

⁴⁶ Dutch disease is a term in economics that refers to the negative consequences arising from large increases in the value of a country’s currency, primarily associated with natural resource discovery such as oil and decline in other sectors such as agriculture and manufacturing. The World Bank, ‘Nigeria - Structural Adjustment Program’ (n 44) vii.

⁴⁷ The World Bank, ‘Nigeria - Structural Adjustment Program’ (n 44) vii.

sector.⁴⁸ In particular, SAP reduced government funding in agriculture, leading to increased costs of agricultural inputs.

Although SAP was unpopular because it reduced certain public sector subsidies, its deregulation and liberalisation principles re-oriented the Nigerian economy. For example, it created awareness about the importance of diversifying the economy – through agriculture and other sectors – which is still a key part of the Nigerian government’s national policy to date. Furthermore, SAP shifted the government’s agriculture policies from public sector driven projects, to private sector-led projects.

Consequently, while Nigeria – along with India, Thailand, and other Global South countries – pushed for creative *sui generis* systems during the TRIPS negotiations, there was silence in this regard within Nigeria.⁴⁹ However, from the above, it is apparent that Nigeria focused primarily on restructuring its economy during this period. Nigeria was also mired in political instability during this period; between 1983 and 1994, it had three military coups, two attempted coups, and an interim government.⁵⁰ Whereas India and Thailand had both drafted plant variety protection Bills by the end of the TRIPS negotiations in 1994, Nigeria had no similar Bill.

Post-TRIPS

The entry into force of TRIPS on 1 January 1995, including the obligation to protect plant varieties, did not change the plant variety protection *status quo* in Nigeria. One can imagine why implementing an international obligation to protect plant varieties was not a priority at this time - the country was basically unstable.

⁴⁸ Shehu Yahaya, ‘State versus Market: The Privatization Programme of the Nigerian State’ in Adebayo Olukoshi (ed), *The Politics of Structural Adjustment in Nigeria* (James Curry Ltd 1993) 18-19.

⁴⁹ See Chapter 5.

⁵⁰ See generally Julius Ihonvbere, ‘Are Things Falling Apart? The Military and the Crisis of Democratisation in Nigeria’ (1996) 34(2) *The Journal of Modern African Studies* 193-225 (‘Are Things Falling Apart?’).

Indeed, the political tensions in the country heightened from 1995 to 1998. The military dictator at the time – General Sani Abacha – assumed authoritarian control.⁵¹ He sought to retain power and had zero tolerance for oppositions. Julius Ihonvbere notes that Abacha's strategy to retain power included:

...divide civil society by playing groups against each other; bribe, misinform, and co-opt; intimidate the leaders of protests and their organisations into silence; contain restless communities, especially minorities across the country; rehabilitate discredited politicians and retired military leaders; continue the system of graft, waste, and mismanagement; consolidate the power of the armed forces; and postpone the transition to civil rule for as long as possible.⁵²

In line with the above strategy, there was a series of civilian imprisonments and executions during this period. For example, Moshood Abiola, winner of the annulled 1993 Presidential election who was arrested and charged with treason, eventually died in custody in 1998, while his wife Kudirat Abiola who campaigned for his release was assassinated in 1996.⁵³ CSOs and activists who criticised the military regime were not left out. Ken Saro-Wiwa, an environmental rights activist who campaigned against environmental damage in the oil-rich Niger Delta region of Nigeria, was executed by hanging in 1995.⁵⁴ This execution led to Nigeria's suspension from the Commonwealth of Nations for over three years.⁵⁵ While

⁵¹ *ibid* 211-12.

⁵² *ibid* 206.

⁵³ Chief Moshood Abiola was charged with treason for declaring himself Nigeria's lawfully elected President.

⁵⁴ Ken Saro-Wiwa, who founded an environmental rights organisation in 1990 – the Movement for the Survival of the Ogoni People – was executed along with eight other activists, namely Barinem Kiobel, John Kpunien, Baribor Bera, Saturday Dobee, Felix Nwate, Nordu Eawo, Paul Levura, and Daniel Gbokoo.

⁵⁵ The Commonwealth Ministerial Action Group (CMAG) suspended Nigeria from the Commonwealth from 11 November 1995 to 29 May 1999, on grounds of serious violation of the principles set out in the Harare Declaration (including the execution of Ken Saro-Wiwa). The suspension excluded Nigeria from receiving Commonwealth technical assistance and prevented government representatives from participating in intergovernmental Commonwealth meetings and events. The Commonwealth, 'Nigeria suspended from the Commonwealth' <<http://thecommonwealth.org/history-of-the-commonwealth/nigeria-suspended-commonwealth>> accessed 05 September 2017.

General Abacha died of a heart attack in 1998, another military dictator – General Abdulsalami Abubakar – took over power. It was only in 1999 that Nigeria returned to civilian administration.

Remarkably, although Nigeria's transition from a military regime to civilian administration in 1999 created a more conducive climate for CSOs activism, it did not yield any developments to plant variety protection. Johnson Ekpere explains that after TRIPS entered into force, he tried to get Nigerian CSOs involved in pushing for a *sui generis* plant variety protection system,⁵⁶ but the CSOs were mostly uninterested.⁵⁷ It is argued that the CSOs' apathy for plant variety protection in Nigeria is also traceable to the absence of the circulation of ideas or lobbies to promote pro-UPOV plant breeder's rights at the time. As discussed in Chapter 5, the Indian and Thai CSOs push for farmers' and community rights was in response to the government's moves towards a plant breeder's rights system.⁵⁸ Indeed, Indian CSOs such as Gene Campaign and Navdanya were established to circulate ideas about farmers' and community rights to counter the circulation of ideas on plant breeder's rights during the TRIPS negotiations.⁵⁹ Thus, since there were no pro-UPOV plant breeders' rights pressures in Nigeria, the CSOs did not have any ideas to counterbalance.

In sum, by the 1 January 2000 deadline for implementing TRIPS obligations (including the obligation to protect plant varieties), there was still silence in this regard in Nigeria. Put differently, both pro-UPOV plant breeders' rights and pro-farmers' rights actors were mute. It was discussed in Chapters 3 and 4 that during this period, Nigeria and other Global South countries elucidated their preference for a *sui generis* plant variety protection at the TRIPS Council in anticipation of

⁵⁶ As stated in Chapter 4, Johnson Ekpere was actively involved in drafting and promoting the African Model Law. Incidentally, he is also Nigerian. The author's personal communication with Johnson Ekpere (January 2017).

⁵⁷ The author's personal communication with Johnson Ekpere (n 56).

⁵⁸ See Chapter 5.

⁵⁹ *ibid.* See also Navdanya, 'Our History' <<http://www.navdanya.org/about-us/our-history>> accessed 24 August 2017; Gene Campaign, 'About Us' <<http://genecampaign.org/about-us/>> accessed 24 August 2017.

the mandated Article 27.3(b) review.⁶⁰ Although the anticipated review failed to take place, it was also discussed in Chapter 4 that Nigeria, along with the other African countries, designed the African Model Law.⁶¹ Nonetheless, Nigeria's active regional and global *sui generis* plant variety protection activism was not translated into a national law. However, as will be seen in 6.2 and 6.3 below, the plant variety protection landscape in Nigeria post-TRIPS deadline is gradually changing.

6.2. Plant Variety Protection Variations in the Global South: Nigeria?

The discussion above shows that the plant variety protection landscape in Nigeria was silent even up to the 2000 TRIPS implementation deadline. This part further analyses plant variety protection in Nigeria, using key factors that influence variations in plant variety protection systems in the Global South as teased out from Chapters 4 and 5. It is important to discuss these factors in the Nigerian context because the Global South have a common position at the TRIPS Council which promotes a creative *sui generis* system that incorporates alternative principles such as farmers' rights alongside access and benefit sharing principles.⁶² Yet, as seen in Chapters 4 and 5, there is a difference between Global South WTO members' 'rhetoric' at the TRIPS Council and their actions at home. In other words, there is a difference between what Global South WTO members 'say' at the global level, and what they actually 'do' at the national level in response to the plant variety protection obligation under Article 27.3(b) of TRIPS. The factors that contribute to the variations in plant variety protection systems in the Global South as teased out from Chapters 4 and 5 are trade agreements, regional associations, pressure from seed companies, UPOV office lobbies, and CSOs activism. The first four factors contribute to the Global South WTO members' accession to the UPOV 1991 Convention, while the last factor contributes to the design of *sui generis* plant

⁶⁰ See Chapters 3 and 4.

⁶¹ See Chapter 4.

⁶² See Chapter 3.

variety protection systems in the Global South.⁶³ These factors are discussed in turn.

Trade Agreements: G8 New Alliance for Food Security and Nutrition

The G8 NAFSN, launched in May 2012, seeks to create conditions to improve agricultural productivity and to develop the agri-food sector in Africa by attracting private investment in agriculture.⁶⁴ African governments participating in the NAFSN, including Nigeria, are required to commit to developing or revising national policies.⁶⁵ African governments are further required to implement certain commitments, termed the ‘New Alliance Commitments’ and to develop ‘Country Cooperation Frameworks’ (CCFs) which set out national policy commitments. CCFs include the creation of business-friendly environments, the removal of fiscal, regulatory, and administrative barriers to trade of agricultural commodities, and regulatory reform in the seed sector to strengthen IPRs of plant breeders.⁶⁶ In particular, countries participating in the NAFSN are obliged to commit to introducing seed laws modelled on the UPOV 1991 Convention, which will facilitate the dissemination of ‘improved’ or ‘high yielding’ seeds to farmers.⁶⁷

Unlike Tanzania which expressly committed to joining the UPOV 1991 Convention in its CCF, Nigeria’s CCF states that:

⁶³ See Chapters 4 and 5.

⁶⁴ New Alliance for Food Security and Nutrition (NAFSN) <<https://new-alliance.org/>> accessed 24 August 2017.

⁶⁵ Nigeria is one of the 19 African governments that have joined the NAFSN. Others are Benin, Burkina Faso, Cote d’Ivoire, Ethiopia, Ghana, Malawi, Mozambique, Senegal, and Tanzania. Nigeria joined NAFSN in 2013. See generally, NAFSN, ‘Nigeria’ <<https://new-alliance.org/country/nigeria>> accessed 25 August 2017.

⁶⁶ NAFSN, ‘Cooperation Framework to Support the New Alliance for Food Security and Nutrition in Nigeria’ <https://new-alliance.org/sites/default/files/resources/new-alliance-progress-report-coop-framework-nigeria_compressed.pdf> accessed 24 August 2017 (‘Cooperation Framework to Support the New Alliance for Food Security and Nutrition in Nigeria’).

⁶⁷ Oliver De Schutter, *New Alliance for Food Security and Nutrition in Africa* (European Parliament, Directorate-General for External Policies Policy Department EP/EXPO/B/DEVE/2015/01, November 2015) 27.

It intends to pursue policy goals in order to build the confidence of domestic and international private sector to significantly increase agricultural investments.⁶⁸

In response, Nigeria's first policy goal was:

To increase private sector participation in the production and distribution of seed and fertilizer in Nigeria.⁶⁹

To achieve this goal, Nigeria committed to pass and implement seed laws to facilitate private sector participation in seed development, multiplication, and marketing.⁷⁰ Although Nigeria did not pass a plant variety protection law in response to this commitment, it passed the Biosafety Management Act in 2015, which regulates the use of modern biotechnology, including genetically modified technologies in Nigeria.⁷¹ Apart from the NAFSN, Nigeria does not have further trade or investment agreements requiring it to design a plant variety protection system.

Regional Associations

Similarly, Nigeria has no regional affiliations requiring it to accede to the UPOV 1991 Convention. It is not a member of any of the regional organisations that has acceded – or is in the process of acceding to the UPOV 1991 Convention. As discussed in Chapter 4, these organisations are OAPI, African Regional Intellectual Property Organisation (ARIPO), and Southern African Development Community (SADC).⁷² As Nigeria is an anglophone country, ARIPO – which was formed to harmonise IPRs systems in anglophone Africa – appears to be the most likely regional IPRs organisation choice. However, Nigeria has simply maintained its

⁶⁸ NAFSN, 'Cooperation Framework to Support the New Alliance for Food Security and Nutrition in Nigeria' (n 66) 2.

⁶⁹ *ibid* 4.

⁷⁰ *ibid*.

⁷¹ National Biosafety Management Agency Act 2015.

⁷² See Chapter 4.

observer status in ARIPO.⁷³ As the two leading African economies of Nigeria and South Africa are not members of the two regional IPRs organisations ARIPO and OAPI, there are ongoing discussions at the African Union (AU) to establish a harmonised IP organisation for Africa called the Pan African Intellectual Property Organisation (PAIPO).⁷⁴ Caroline Ncube notes that Nigeria and South Africa's absence from ARIPO and OAPI have been cited as the justification for establishing PAIPO.⁷⁵ Discussions about the establishment of PAIPO are still on-going, thus its status in relation to a regional plant variety protection system in Africa is yet to be clarified.

While Nigeria does not have an IPRs policy which can be consulted to decipher its reason for not joining ARIPO, insights for its non-membership to a regional IPRs organisation can be gained from its general approach to IPRs. Apart from copyrights which is the most vibrant IPRs subject matter in Nigeria, there is limited activity regarding industrial property and *sui generis* rights such as patents, trademarks, and plant variety protection.⁷⁶ As highlighted in Chapter 2, Nigeria's first post-colonial Trade Marks and Patents Act, enacted in 1965 and 1970 respectively, are still in force to date.⁷⁷ Thus, it can be surmised that industrial property and *sui generis* rights are not national priorities. In sectors such as trade in goods and services where Nigeria is both active and has key influencers, it has joined relevant regional organisations to promote its interests. For example, Nigeria is a member of the Economic Community of West African States (ECOWAS), which was established to facilitate economic integration in West

⁷³ African Regional Intellectual Property Organisation (ARIPO), 'About Us'

<<http://www.aripo.org/about-aripo/membership-member-states>> accessed 4 September 2017.

⁷⁴ African Union (AU), 'Assembly of the Union, Twenty-Sixth Ordinary Session 30-31 January 2016, Addis Ababa, Ethiopia' <https://au.int/web/sites/default/files/decisions/29514-assembly_au_dec_588_-_604_xxvi_e.pdf> accessed 04 September 2017. See also Caroline B Ncube and Eliamani Laltaika, 'A New Intellectual Property Organization for Africa?' (2013) 8(2) *Journal of Intellectual Property Law and Practice* 114-17; Yeukai Mupangavanhu, 'African Union Rising to the Need for Continental IP Protection? The Establishment of the Pan-African Intellectual Property Organization' (2015) 59(1) *Journal of African Law* 1-24; Caroline Ncube, *Intellectual Property Policy, Law and Administration in Africa: Exploring Continental and Sub-Regional Co-operation* (Routledge 2016) 126-39 (*Intellectual Property Policy, Law and Administration in Africa*).

⁷⁵ Ncube, *Intellectual Property Policy, Law and Administration in Africa* (n 74) 68-69.

⁷⁶ See Chapter 2.

⁷⁷ *ibid.*

Africa.⁷⁸ Indeed, Nigeria alone accounts for about 76 per cent of the total trade in the ECOWAS region.⁷⁹ As Nigeria does not have pressures from regional associations, possible pressures from private seed companies and the UPOV office are discussed next.

Private Seed Companies and UPOV Office Lobbies

Unlike the Kenyan, Indian, and Thai examples in Chapters 4 and 5, seed companies or seed associations have not circulated pro-plant breeders' rights ideas in Nigeria.⁸⁰ Seed companies and associations have not organised national seminars or workshops on plant variety protection in Nigeria. In fact, the only workshop on plant variety protection in Nigeria was organised by public sector agriculture research institutes at the National Cereals Research Institute (NCRI), Badeggi, on 14 December 2010.⁸¹ This workshop was organised to 'create awareness on IP issues, rights and obligation and to discuss the prospects of establishing IPRs policies in the NCRI and other agriculture research institutes.'⁸² Over 80 officials from agricultural research institutes, universities, and relevant government ministries attended the workshop. Importantly, the convenor of the workshop, Catherine Abo, advocated for the enactment of a plant and animal variety protection system in Nigeria, as well as IPRs offices in the NCRI and other agriculture research institutes.⁸³ This workshop was the first to discuss plant variety protection in Nigeria, however it did not result in any legal changes or national debates.

⁷⁸ Nigeria is one of the 15 West African member states of the Economic Community of West African States (ECOWAS). It is a founding member of ECOWAS, which was established on 28 May 1975 through the treaty of Lagos. The other 14 ECOWAS members are Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Sierra Leone, Senegal, and Togo. ECOWAS <<http://www.ecowas.int/about-ecowas/basic-information/>> accessed 05 September 2017.

⁷⁹ ECOWAS, 'Trade' <<http://www.ecowas.int/ecowas-sectors/trade/>> accessed 05 September 2017.

⁸⁰ See Chapters 4 and 5.

⁸¹ See generally, Catherine H Abo, John Abah and Nahemiah Danbaba (eds), *Proceedings of the National Workshop on Intellectual Property: Issues, Rights and Obligations* (National Cereals Research Institute (NCRI), Badeggi, Nigeria, 2010) (*Proceedings of the National Workshop on Intellectual Property*).

⁸² *ibid* 10.

⁸³ *ibid*.

Furthermore, although post-SAP policies in Nigeria have focused on promoting private sector participation in agriculture, as mentioned above, the low demand for improved seeds in Nigeria resulted in the closure of seed companies. However, Nigeria's Minister of Agriculture from 2010 to 2015, Dr. Akinwumi Adeshina, revitalised the agriculture sector by introducing projects to promote farmers' access to seeds and input, such as the Growth Enhancement Support (GES) scheme.⁸⁴ Furthermore, Adeshina's agriculture policy – the Agriculture Transformation Agenda (2011-2015), which the current Agricultural Promotion Policy (2016-2020) builds on – promotes a private sector-led agricultural industry.⁸⁵ These agriculture policies revived the interest of multinationals in Nigeria's agriculture sector. Multinationals that contributed to pushing for plant variety protection systems such as Monsanto, Dupont-Pioneer, and Syngenta have resumed operations in Nigeria.⁸⁶ Zidafamor Jimmy, the Deputy Director for Seed Production at the National Agricultural Seeds Council of Nigeria, explains that certain multinationals have questioned the absence of a plant variety protection system in Nigeria.⁸⁷ Although there are no records of multinationals pushing for plant breeder's rights in Nigeria, it can be surmised that Nigeria's isolation from UPOV pressures may not last long given precedents in other Global South countries.

For now, UPOV official records show that its activities in Nigeria are limited. In fact, a thorough search of the up-to-date UPOV website reveals that one of the few records of the UPOV office's direct engagement in Nigeria was a sub-regional workshop on the 'Use of IPRs System for the Promotion of Innovation and

⁸⁴ Federal Ministry of Agriculture and Rural Development (FMARD), 'Growth Enhancement Scheme' <<http://fmard.gov.ng/growth-enhancement-support-scheme-gess/>> accessed 05 September 2017.

⁸⁵ FMARD, 'Agriculture Transformation Agenda: 2011-2015'; FMARD, 'Agriculture Promotion Policy: 2016-2020'.

⁸⁶ See for example, Monsanto, 'Monsanto in Africa' <http://www.monsantoafrica.com/who_we_are/monsanto_in_africa.asp> accessed 24 August 2017; Dupont-Pioneer, 'Nigeria' <<https://www.pioneer.com/home/site/about/business/contact-us/middle-east-africa/nigeria/>> accessed 24 August 2017; Syngenta, 'Nigeria' <<https://www4.syngenta.com/contacts>> accessed 24 August 2017.

⁸⁷ The author's personal communication with Zidafamor Jimmy, Deputy Director for Seed Production at the National Agricultural Seeds Council of FMARD (March 2017).

Technology Transfer for Agriculture and Food Production in West Africa’ held in Abuja, Nigeria from 5 to 7 November 2003.⁸⁸ UPOV officials participated in this meeting, which was organised by the Centre regional Africa de la technologie (CRAT) in cooperation with the World Intellectual Property Organisation (WIPO) and with financial support from the International Fund for Agricultural Development (IFAD).⁸⁹ Further search of the UPOV website reveals that the UPOV office has not organised any follow-up or further meetings in Nigeria. The next section discusses CSOs, which were identified in Chapter 5 as significant contributors to pushing for creative *sui generis* systems in the Global South.

Civil Society Organisations

CSOs in Nigeria’s agricultural sector were inactive with regard to plant variety protection during the TRIPS negotiations as seen in 6.1 above. This position has not changed to date. Indeed, of the CSO representatives interviewed during the fieldwork for this thesis, only one interviewee – Dr. Olaseinde Arigbede, National Coordinator of the Union of Small and Medium Scale Farmers of Nigeria (USMEFAN) – was aware of plant variety protection.⁹⁰ USMEFAN is a Nigerian

⁸⁸ UPOV, *Plant Variety Protection* (No 96, December 2003) 18

<http://www.upov.int/edocs/pubdocs/en/upov_pub_438_96.pdf> accessed 20 June 2017 (*Plant Variety Protection*). However, participants from Nigeria attended - (i) a training session on UPOV at the 18th International Course on Plant Variety Protection organised by Naktuinbouw in Wageningen, Netherlands on 16 June 2015. (ii) the UPOV office’s presentation on the ‘Implementation of the International Convention for the Protection of New Varieties of Plants’ at the WIPO-WTO Colloquium for Teachers of Intellectual Property on 23 June 2015. (iii) the UPOV office’s presentation on ‘The Protection of Plant Varieties and the International Union for the Protection of New Varieties of Plants (UPOV)’ at the WIPO University of Geneva Summer School on Intellectual Property on 26 June 2015. See: International Union for the Protection of New Varieties of Plants, ‘Forty-Ninth Ordinary Session Geneva, 29 October, 2015- Report on Activities During the First Nine Months of 2015’ (C/49/3, 6 October 2015).

<http://www.upov.int/edocs/mdocs/upov/en/c_49/c_49_3.pdf> accessed 20 June 2017.

⁸⁹ *ibid.*

⁹⁰ Six representatives from four CSOs were interviewed during the fieldwork: Femi Oke, Chairman of the Lagos chapter of All Farmers Association of Nigeria (AFAN) (Lagos, 2015); Ike Ubaka, National President of AFAN (Abuja, 2015); Akin Gbadamosi, Secretary General of the Federation of Agricultural Commodity Associations of Nigeria (FACAN) (Abuja, 2015); Prince Peter Bakare, Deputy Executive Secretary of FACAN (Abuja, 2015); Segun Adewumi, President of the Cassava Growers Association of Nigeria (CGAN) (Abuja, 2015); and Dr Arigbede, National Coordinator of the Union of Small and Medium Scale Farmers Association of Nigeria (USMEFAN) (Gbongan, 2015).

CSO actively involved in promoting small-scale farmers' interests at the local, national, and international levels.⁹¹ Arigbede points out that:

Farmers' rights, community rights and even breeder's rights are not taken up by the Nigerian government. The public does not have knowledge or awareness about these issues... Any law-maker in the National Assembly can push for provisions inimical to our [farmers and farming communities] interests. Our struggle is both at home and abroad... I was in India for a while. They have progressed beyond us. They have dedicated institutions to protect and promote plant variety protection...⁹²

Although Arigbede is passionate about promoting Nigerian small-scale farmers' interests, he notes that one of his main handicaps in pushing for farmers' interests, including farmers' rights in Nigeria, has been the lack of funding both to participate in the global debates and to lobby at the national and local levels.⁹³ He asserts that:

Our governments never funded us to attend meetings. I remember Obasanjo [Nigeria's President from 1999-2007] openly said I will not give CSOs money, go and find your money, that is what we faced. There were meetings we attended and those who funded had the temerity to stand up and say Dr. Arigbede, if you take this position, you will never be asked to attend these meetings, and of course we stood up to say – 'thank you very much', but we are not anxious to come to meetings where we are short-changed.... Unfortunately, once you do not fund yourself, you are handicapped. Even your organisation is threatened if you take too trenchant a position- a people rooted position. Even your brothers and sister Africans turn on you and say 'listen, we are here to make progress please, can you drop your political issues at home?'⁹⁴

⁹¹ Fieldwork interview with Dr Olaseinde Arigbede, National Coordinator of USMEFAN (Gbongan, 2015) (transcript on file with author).

⁹² *ibid.*

⁹³ *ibid.*

⁹⁴ *ibid.*

Notwithstanding its funding limitations, thanks to Arigbede's dedication and passion, USMEFAN is well-known as a small-scale centred organisation at both national and international forums.⁹⁵ Arigbede notes that USMEFAN operates with little outside funding and few employees, but it has networks with farmers in 22 states across Nigeria.⁹⁶ It has collaborated or established relations with organisations such as IFAD, Oxfam-Novib, Network of Professional Agricultural Producers of West-Africa (ROPPA), and Agriterra.⁹⁷

The other CSOs interviewed, including the All Farmers Association of Nigeria (AFAN), the Federation of Agricultural Commodity Associations of Nigeria (FACAN), and the Cassava Growers Association of Nigeria (CGAN), were neither aware about nor involved in promoting farmers' rights issues.⁹⁸ These CSOs explained that they focus on topical issues affecting small-scale farmers such as access to quality inputs, access to credit, storage facilities, processing to prevent post-harvest losses, as well as access to domestic and international markets.⁹⁹

Apart from the CSOs' focus on small-scale farmers' day-to-day issues, it is important to point out the divergences and tensions amidst CSOs in Nigeria's agriculture sector. Whereas Indian and Thai CSOs had uniting *spirits* such as *Satyagraha*, Sufficiency Economy philosophy, and New Agriculture theory, CSOs in Nigeria's agriculture sector have no similar unifying bonds. In contrast, the CSOs are marked by ethnic rivalry and polarisation. The roots of Nigeria's ethnic rivalry which is also reflected in the CSOs in the agriculture sector can be traced to the amalgamation of ethnically diverse Northern and Southern British protectorates for economic and administrative ease in 1914.¹⁰⁰ It was

⁹⁵ Agriterra, 'Farmers Organizations in Nigeria: An Overview' (Agriterra, June 2008) 1, 15 <http://www.inter-reseaux.org/IMG/pdf_Mapping_Agricord_Nigeria_version_courte.pdf> accessed 30 August 2017 ('Farmers' Organizations in Nigeria').

⁹⁶ Grain De Sel, 'Farmers Organization Not Yet Unified in Nigeria' (No 51, Grain De Sel, July-September 2010) 29-30.

⁹⁷ Agriterra, 'Farmers Organizations in Nigeria' (n 95) 15.

⁹⁸ Conclusion derived from fieldwork interviews with Oke, Ubaka, Gbadamosi, Adewumi, and Bakare (n 90).

⁹⁹ *ibid.*

¹⁰⁰ See *Pre-TRIPS* above. See also Richard Roberts and Kristin Mann, 'Law in Colonial Africa' in Richard Roberts and Kristin Mann (eds), *Law in Colonial Africa* (Heinemann: James Curry 1991);

administratively convenient for the British colonial administration to amalgamate the North and South protectorates because the budget surplus derived from Southern Nigeria was used to offset the budget deficit in Northern Nigeria. Although the amalgamation united distinct regions, its peoples remained disunited. Apart from inter-ethnic rivalry – that is, rivalry between two or more ethnic groups, there were also intra-ethnic rivalries – that is, rivalries within the same ethnic group. For example, as will be seen below, there was rivalry between two CSO leaders in the agriculture sector who were both from the northern part of Nigeria, albeit, from different sub-ethnic groups.¹⁰¹ Obiora Okafor notes that while flags and personnel changed in Nigeria and the other African countries during their independence, these countries inherited flawed structural organisations.¹⁰² He adds that these post-colonial countries such as Nigeria failed to reconfigure themselves, losing the opportunity to shed their inherited illegitimacies.¹⁰³ While ethnic diversity and colonial heritage is not unique to Nigeria, as mentioned above, Nigeria lacks the unifying bonds India and Thailand have. Indeed, there are limited points of convergence at which to articulate a *national project* in the country.¹⁰⁴

Prince Peter Bakare explains how the ethnic rivalries, power struggles, and government influence shaped CSOs in Nigeria's agricultural sector in the 1990s.¹⁰⁵

Sir Udo Udoma, *History and the Law of the Constitution of Nigeria* (Malthouse Press Ltd 1994) 1; Okoi Arikpo, *The Development of the Modern Nigeria* (Penguin Books 1967) 26-29 and 35; T O Elias, *Nigeria, The Development of its Laws and Constitution* (Stevens & Sons 1967) 18.

¹⁰¹ Nigeria currently has over 250 ethnic groups spread across its 36 states and Federal Capital Territory.

¹⁰² Obiora Chinedu Okafor, 'After Martyrdom: International Law, Sub-State Groups, and the Construction of Legitimate Statehood in Africa' (2000) 41(2) *Harvard International Law Journal* 503 and 507-511 ('After Martyrdom'). Makau Mutua also makes similar arguments. See generally, Makau Mutua, 'Why Redraw the Map of Africa: A Moral and Legal Inquiry' (1995) 16 *Michigan Journal of International Law* 1113.

¹⁰³ Okafor, 'After Martyrdom' (n 102) 507-11. It is important to note that the Ibo peoples in South-eastern Nigeria attempted to secede from the Federal Republic of Nigeria in the late 1960s. This led to a civil war from 1967 to 1970, but this attempt was unsuccessful.

¹⁰⁴ Ihonvbere, 'Are Things Falling Apart?' (n 50) 201.

¹⁰⁵ There is a dearth of literature on this history. Two useful sources for this narrative are the following: (1) personal communication with Prince Peter Bakare, who gave a first-hand account of the historical development. He has been actively involved in the farmer organisations in Nigeria since the military regime. He is the former Director of Administration of AFAN and the current Deputy Executive Secretary of FACAN. (2) Sale Bayari, 'Nigeria: Where is Obasanjo's Apex Farmers' Body?' (12 September 2002) *Vanguard Newspaper* ('Nigeria: Where is Obasanjo's Apex Farmers' Body?')

Bakare recalls that during General Sani Abacha's military regime (1993 to 1998), there was a farmers' association called the Federation of Farmers Association of Nigeria (FOFAN), headed by Dr. Shettima Mustapha.¹⁰⁶ FOFAN was a platform that brought together farmers to share common agrarian concerns and devise techniques to solve them. However, the growing membership of FOFAN was worrying for Abacha as he was concerned that a large unified farmers' association could support his opponents and contribute to ousting his regime.¹⁰⁷ Thus, Abacha directed Vice-Admiral Murtala Nyako to establish the Practising Farmers Association of Nigeria (PFAN), whose activities he (Abacha) could influence because of his close relations with Nyako.¹⁰⁸ Farmers, attracted by the inclusion of 'practising' in the new organisation, were lured to join PFAN.

FOFAN and PFAN were constantly at loggerheads with regard to issues concerning farmers' interests, polarising the farmers into these two groups. Ethnic differences between the leaders further contributed to the divisions. Although Mustapha of FOFAN and Nyako of PFAN are both from Northern Nigeria, Mustapha is 'Hausa' while Nyako is 'Fulani.' As such, Hausa farmers tended to align with Mustapha, while Fulani farmers supported Nyako. Rather than maintaining a united front to push for farmers' interests similar to what was seen in India and Thailand, the Nigerian CSOs are divided by ethnic idiosyncrasies.

The election of 'President-Farmer' Olusegun Obasanjo in 1999 resulted in noteworthy CSO developments in the agricultural sector.¹⁰⁹ Obasanjo, seeking to

¹⁰⁶ Dr Shettima Mustapha was a former commissioner in Borno State. He was a Vice Presidential candidate of the Nigerian Peoples Party in 1983, and was Minister of Agriculture and Natural Resources from 1990 to 1992.

¹⁰⁷ The author's personal communication with Prince Peter Bakare (2015).

¹⁰⁸ General Sani Abacha passed away on 8 June 1998, shortly after PFAN was formed. Vice-Admiral Murtala Nyako was a Naval Officer who held many high-ranking positions, including Chief of Naval Operations, Flag Officer Commanding the Western Naval Command, Flag Officer Commanding the Naval Training Command, and Chief of Naval Staff. He has also had different government positions – he was the Governor of Niger State from February 1976 to December 1977. He was elected Governor of Adamawa State in April 2007.

¹⁰⁹ Olusegun Obasanjo owns one of the largest farms in Nigeria. After his two terms in office (1999-2007), he returned to farming at Obasanjo Farms Ltd, Otta, Ogun State. Olusegun Obasanjo, 'My Journey Back to the Future of African Farming' (26 May 2016) The Africa Report <<http://www.theafricareport.com/East-Horn-Africa/my-journey-back-to-the-future-of-african-farming-olusegun-obasanjo.html>> accessed 30 August 2017.

resolve the tension between FOFAN and PFAN, suggested that they put aside their differences and work together in farmers' interests.¹¹⁰ He further recommended that they merge to make it easier for the government to attend to one national CSO representing farmers' interests.¹¹¹ The two warring organisations, responding to President Obasanjo's advice, merged to form AFAN.¹¹² Nyako was elected president of AFAN, while Mustapha was elected as his first vice president. As such, AFAN was established as an umbrella for the different commodity-based associations in Nigeria.¹¹³ As one of the key farmers' organisations that liaise with the Nigerian government on behalf of farmers, AFAN plays a significant role in the agriculture sector in Nigeria. However, as mentioned above, it is not involved in plant variety protection related activism.

There are a variety of other CSOs in Nigeria's agriculture sector which have different focuses.¹¹⁴ While there is no record of the exact number of CSOs in the agriculture sector, the CSOs can be broadly divided into five groups:

- (i) CSOs with a focus on advocacy
- (ii) CSOs that focus on providing financial services
- (iii) CSOs that operate only at the grass-root or local levels
- (iv) CSOs that specialise in one or more agricultural commodities
- (v) CSOs that provide special services for specific genders or age groups, i.e. youth, elders, male or female-only organisations

Notably, while the first group of CSOs – which includes USMEFAN – may engage in plant variety protection discourse as it emerges, no Nigerian CSO specialises in IPRs, plant variety protection, or biodiversity-related issues. Although it was argued in 6.1 above that the absence of pro-UPOV plant breeder's rights pressures was one reason CSOs were not involved in pro-farmers' rights movements in the

¹¹⁰ Bayari, 'Nigeria: Where is Obasanjo's Apex Farmers' Body?' (n 105).

¹¹¹ *ibid.*

¹¹² This was initially referred to as the All Farmers' Apex Association of Nigeria (ALFAAN).

¹¹³ Agriterra, 'Farmers' Organizations in Nigeria: An Overview' (n 95) 15.

¹¹⁴ *ibid* 13-32.

1990s, there are now plant variety protection law-making developments in Nigeria which CSOs ought to engage in. For example, the IPC Bill, which includes a plant variety protection section, was presented to the Nigerian National Assembly on 8 June 2016.¹¹⁵ The plant variety protection section of the IPC Bill is analysed next.

6.3 Unpacking the Industrial Property Commission Bill

6.1 and 6.2 above discussed the historical context and factors that influence variations in plant variety protection systems in the Global South vis-à-vis Nigeria. While the preceding two parts provide rich insights into the plant variety protection *status quo* in Nigeria, this part illuminates a significant current development: the plant variety protection section in the IPC Bill. As will be recalled from Chapter 2, comprehensive IPRs legislations which combined distinct IPRs subject matters such as copyrights, trademarks, patents, and plant variety protection have been introduced in Nigeria.¹¹⁶ The Bills were not passed for reasons such as failure to prioritise IPRs matters on the legislative agenda, civil service officials' aversion to combining copyrights with industrial property, and absence of committed actors to push the Bills.¹¹⁷ In essence, apart from contestations about substantive plant variety protection provisions discussed in Chapters 4 and 5, concerns about the configuration of IPRs legislations also arise in Nigeria. Harmonising the administration of distinct IPRs subject matters were the prominent concerns raised about the IPRs Bills introduced in Nigeria.¹¹⁸ The plant variety protection sections of these Bills were not specifically debated.

The plant variety protection section of the IPC Bill is similar to the Intellectual Property Commission of Nigeria (IPCOM) 2008 and the other comprehensive IPRs

¹¹⁵ A Bill for an Act to Provide for the 'Establishment of the Industrial Property Commission of Nigeria, Repeal of Trademarks Act Cap 436, LFN 1990 and Patents and Designs Act, Cap 344, LFN 190 and make Comprehensive Provisions for the Registration and Protection of Trademarks, Patents and Designs, Plant Varieties, Animal Breeders and Farmers' Rights and for Related Matters' (HB 16.06.640, C 3399) <<http://placbillstrack.org/upload/HB640.pdf>> accessed 03 September 2017.

¹¹⁶ See Chapter 2.

¹¹⁷ *ibid.*

¹¹⁸ *ibid.*

Bills proposed in Nigeria.¹¹⁹ The plant variety protection section in these Bills are drawn from the African Model Law.¹²⁰ Johnson Ekpere, one of the lead protagonists of the African Model Law, was also one of the key drafters of the plant variety protection section in Nigeria's earlier IPRs Bills. Ekpere explains that he adopted key provisions from the African Model Law as the template for the plant variety protection section for Nigeria's IPRs Bill.¹²¹ However, as will be seen below, the plant variety protection section of the IPC Bill differs from those in the previous IPRs Bills. Significantly, certain key provisions such as farmers' rights, exceptions to breeders' rights and government use are excluded from the IPC Bill. The exclusion of above provisions, alongside the lack of public debates about plant variety protection substantiates Arigbede's remarks above about (i) the lack of awareness about plant variety protection issues in Nigeria, and (ii) the possibility of law-makers in Nigeria to push for plant variety protection Bills inimical to farmers' interests.¹²² The substantive plant variety protection provisions of the IPC Bill, as well as the significant aforementioned exclusions from the Bill are examined in turn below.

Coverage of the Law

The IPC Bill provides for the protection of three types of varieties: (i) new varieties, (ii) extant varieties, and (iii) farmers' varieties.¹²³ Similar to the African Model Law as well as the Indian and Thai plant variety protection provisions, the IPC Bill fails to define new varieties. It simply provides that new varieties are required to meet the 'distinct, uniform and stable' conditions for protection (discussed below). Furthermore, Section 174 of the IPC Bill provides that only genera and species specified by the plant variety regulation established to implement the Bill are eligible for protection. In other words, the regulation can

¹¹⁹ IPC Bill (n 1).

¹²⁰ See Chapter 4 for the African Model Law.

¹²¹ Fieldwork interview with Johnson Ekpere, Former Secretary-General of the Scientific, Technical, and Research Commission of the Organisation of African Unity (OAU/STRC) and lead protagonist of the African Model Law (Ibadan, 2015) (transcript on file with author).

¹²² Fieldwork interview with Dr Olaseinde Arigbede (n 91).

¹²³ IPC Bill, pt D, s 174.1(a)-(c).

restrict the protection of certain new plant varieties. Similarly, extant and farmers' varieties are not defined in the IPC Bill.

In rethinking the coverage of the Bill's provisions, the definitions of new, extant varieties, and farmers' varieties should be clarified and expressly set out. The Indian and Thai plant variety protection systems can provide guidelines for defining extant and farmers' varieties.¹²⁴ However, it is also important to tailor these definitions to the Nigerian context to circumvent the shortcomings of identifying farmers' and extant varieties in the Indian and Thai systems as highlighted in Chapter 5.¹²⁵

Conditions for Protection

Section 175 of the Bill provides conditions for the protection of the different categories of varieties.¹²⁶ The conditions for protecting new varieties broadly follow the African Model Law's distinctiveness, uniformity, and stability (DUS) template.¹²⁷ Notably, the distinctiveness condition simply provides that a variety is distinct if it is clearly distinguishable by *at least one or more identifiable characteristics* from other plant varieties. While similar to the African Model Law, this condition deviates from the UPOV 1991 Convention by introducing *at least one or more identifiable characteristics*. However, the IPC Bill fails to define *identifiable characteristics*. For example, should they be characteristics that contribute to the principal features, performance, or value of the plant variety under assessment? Specifying the identifiable characteristic provision could promote breeding and protecting improved varieties with special agronomic characteristics, not merely aesthetic or cosmetic features.¹²⁸

¹²⁴ See Chapter 5.

¹²⁵ *ibid.*

¹²⁶ IPC Bill, s 175.

¹²⁷ See Chapter 4.

¹²⁸ For example, the Indian plant variety protection system provides for agronomic distinctions.

Similar to the Indian plant variety protection system, the IPC Bill sets out further provisions for registering new varieties. Section 179.1 of the IPC Bill provides that applications for registering varieties are required to include provisions such as:

- (i) A complete passport data of the parental lines from which the variety was derived, along with the geographical location from where the genetic material was taken and all such information relating to the contribution, if any, of any farmer, village, community, institution, or organisation in breeding, evolving, or developing the variety.
- (ii) A declaration that the genetic materials or parental material acquired for the breeding, evolving, or developing the variety was lawfully acquired.¹²⁹

These two provisions are disclosure of origin and prior informed consent requirements, which prevent unauthorised use of genetic materials to develop new varieties. Ikechi Mgbeoji points out that these additional conditions of registration ensure that while Nigeria fulfils its TRIPS obligation, it also incorporates standards that limit exploitation of genetic materials.¹³⁰ In particular, the disclosure of origin and prior informed consent application requirements facilitate the identification of farmers' or farming communities' plant materials used to develop new varieties. This identification can then lead to negotiation of appropriate benefit sharing agreements.

Extant varieties are also required to meet the DUS conditions.¹³¹ However, the IPC Bill provides that the application of these conditions to extant varieties will be further clarified in the plant variety protection regulations. It is suggested that the plant variety protection regulations should relax the uniform and stable conditions

¹²⁹ See IPC Bill, s 179 for other application requirements.

¹³⁰ Fieldwork interview with Ikechi Mgbeoji (Lagos, 2015) (transcript on file with author).

¹³¹ IPC Bill, s 175.2.

for registering extant varieties, as extant varieties which are already in the public domain are usually less uniform and stable than new varieties. India's plant variety protection regulations can provide guidelines for this.¹³²

Furthermore, the IPC Bill states that farmers' varieties 'may not have to meet the distinct, uniform and stable conditions.'¹³³ Section 173.2 of the IPC Bill simply provides for farmers and farming communities to identify varieties with specific attributes.¹³⁴ Like the African Model Law, the condition for registering farmers' varieties in the IPC Bill is vague.¹³⁵ Notably, the IPC Bill fails to mention the types of specific attributes farmers' varieties are required to have to qualify for registration. This should be clarified by defining the conditions for 'identifiability.' The tentative language included in the section – 'may' – should be deleted, as similar to extant varieties, farmers' varieties are usually less uniform and stable than new varieties. Inclusion of the tentative language provides a loophole that could prevent the registration of farmers' varieties.

Scope of Protection

Section 185.1 of the IPC Bill grants breeders of annual crops exclusive rights over a new variety for a duration of 10 years, while breeders of trees, vines, and other perennials are granted protection for a duration of 15 years.¹³⁶ Breeders of these varieties or their successors, agents, or licensees have exclusive rights to produce, sell, market, distribute, import, or export the variety.¹³⁷ Notably, these periods of protection are shorter than those stated in the African Model Law, which provides 20 years for annual crops and 25 years for trees.¹³⁸ Similarly, these periods are shorter than the duration of protection for new varieties in both the Indian and Thai plant variety protection systems. As previously discussed, India protects new

¹³² Protection of Plant Varieties and Farmers' Rights Authority India, 'Plant Variety Registry Related Information' <<http://plantaauthority.gov.in/PVR.htm>> accessed 03 September 2017.

¹³³ IPC Bill, s 173.2.

¹³⁴ IPC Bill, s 173.2.

¹³⁵ African Model Law, pt V and ch 4.

¹³⁶ IPC Bill, s 185.1.

¹³⁷ IPC Bill, s 186.

¹³⁸ African Model Law, art 34.

varieties of annual crops for an initial duration of six years, but allows renewal for up to 15 years, while Thailand provides protection for 12 years.¹³⁹ As plant breeding is a time and resource consuming process, the short duration of protection may discourage investment in breeding new varieties in Nigeria.

It is important to note that Section 185 simply provides for ‘duration of breeder’s rights.’¹⁴⁰ Similarly, Section 186 of the IPC Bill provides that ‘a certificate of registration for a variety issued under this Act shall confer an exclusive right on the breeder or his successor, his agent or licensee, to produce, sell, market, distribute, import or export the variety or breed.’¹⁴¹ No provision in the IPC Bill defines who a breeder is or specifies which category of varieties this duration or scope of rights applies to. Thus, it can be concluded that the duration of breeders’ rights and scope of protection set out in Sections 185 to 187 of the IPC Bill applies to all categories of varieties: new, extant, and farmers’ varieties. The African Model Law does not provide guidelines in this regard, as it also does not set out the duration of protection for farmers’ and communities’ varieties.¹⁴²

Protection of farmers’ and extant varieties under the Indian and Thai plant variety protection systems also differ. While the Indian plant variety protection system provides for exclusive IPRs for farmers’ and extant varieties, the Thai plant variety protection system provides IPRs only for local domestic varieties. For wild plant varieties and general domestic varieties, the Thai plant variety protection system contains access and benefit sharing provisions – otherwise known as liability rule – instead. In other words, anyone who desires to use protected wild plant varieties and general domestic varieties for commercial purposes are required to request for permission from the competent national authority, which permission is granted subject to a benefit sharing agreement.¹⁴³

¹³⁹ See Chapter 5.

¹⁴⁰ IPC Bill, s 185.

¹⁴¹ IPC Bill, s 186.

¹⁴² See Chapter 4.

¹⁴³ See Chapter 5.

Ruth Okediji favours the adoption of liability rules for farmers' varieties and extant varieties in Nigeria, rather than exclusive IPRs.¹⁴⁴ Okediji explains that due to Nigeria's large land mass – 923,768 square kilometres – and possible challenges in identifying the exact farmers, farming communities, or research institutions that developed farmers' or extant varieties, it is better to adopt the liability rule approach. With the liability system, anyone who wants access to registered farmers' or extant varieties would pay an agreed benefit sharing amount for such varieties.¹⁴⁵ For his part, Ikechi Mgbeoji points out that farmers and farming communities should engage in defensive registration of farmers' varieties and extant varieties. He explains that 'if as many local varieties as possible are registered, even if the rights are not exercised, at least it stops commercial breeders and seed companies from claiming and registering those varieties.'¹⁴⁶ This thesis proposes a mixture of both suggestions above for Nigeria. That is, protection of farmers and extant varieties, as well as a comprehensive access and benefit sharing structure to compensate for use of farmers' and extant varieties.¹⁴⁷

The scope of protection, along with the other plant variety protection provisions in the IPC Bill are similar to the previous IPCOM and other IPRs Bills. However, the IPC Bill is strikingly different as it excludes farmers' rights and breeder's rights exceptions, as will be seen next.

Plant Variety Protection: Intellectual Property Commission Bill 2008 and Industrial Property Commission Bill 2016

This section discusses three important exclusions from the IPC Bill, namely: farmers' rights, exceptions to breeders' rights, and government use in turn.

First, the IPC Bill excludes farmers' rights provisions that were in the IPCOM and previous IPRs Bills. For example, Section 203.1(d) of the IPCOM Bill provides for

¹⁴⁴ Fieldwork interview with Ruth Okediji (via Skype, 2015) (transcript on file with author).

¹⁴⁵ Fieldwork interview with Okediji (n 144).

¹⁴⁶ Fieldwork interview with Mgbeoji (n 130).

¹⁴⁷ Suggestions on access and benefit sharing is discussed further below.

farmers' rights to save, use, exchange, and sell farm-saved seed or propagating material of *farmers' varieties*.¹⁴⁸ This provision formally allows the sale of farmers' varieties in Nigeria.¹⁴⁹ It was discussed in Chapter 2 that the NCVLBA and the National Agricultural Seed Act (NASA) provisions both exclude the registration and commercialisation of farmers' varieties.¹⁵⁰ Thus, the express provisions for the sale of farmers' varieties in the IPCOM Bill officially allows small-scale farmers to commercialise their traditional varieties. This provision thus preserves small-scale farmers' control over their livelihood and gives force of law to the small-scale farmer-managed informal seed system.¹⁵¹ This provision could incentivise small-scale farmers to innovate. As seen in the Indian example in Chapter 5, the Indian plant variety protection system provides for farmers' rights to save, use, sow, re-sow, exchange, share, or sell *farmers' varieties*.¹⁵² The Indian Protection of Plant Varieties and Farmers' Rights Authority further grants awards to farmers and farming communities that have conserved and developed farmers' varieties.¹⁵³ This incentive, in addition to the protection of farmers' varieties, promotes small-scale farmers' plant variety innovation in India.

Similarly, Section 203.1(f) of the IPCOM Bill provides for farmers' rights to 'save, use, multiply and process farm saved seed of *protected varieties*.'¹⁵⁴ Nonetheless, Section 203(2) of the IPCOM Bill prohibits farmers from selling farm-saved seed or propagating materials of breeders' protected varieties on a commercial scale.¹⁵⁵ Thus, similar to commercial breeders' access to farmers' varieties, this provision

¹⁴⁸ Emphasis added. The emphasis here is to distinguish these farmers' rights to save, use, exchange, and sell farm-saved seed or propagating material of *farmers' varieties* from the similar rights to save, use, and exchange *breeders' varieties* as set out in the next paragraph.

¹⁴⁹ IPCOM Bill, s 203.1(d).

¹⁵⁰ See Chapter 2.

¹⁵¹ Chittur S Srinivasan, 'Institutional Capacity and Implementation Issues in Farmers' Rights' in Michael Halewood (ed), *Farmers' Crop Varieties and Farmers' Rights: Challenges in Taxonomy and Law* (Earthscan 2016) 251.

¹⁵² See Chapter 5. See also Indian Protection of Plant Varieties and Farmers Rights Act 2001, s 39. Emphasis added.

¹⁵³ India grants three types of awards to incentivise small-scale farmers: (i) Plant Genome Saviour Community Award; (ii) Plant Genome Saviour Farmer Reward; and (iii) Plant Genome Saviour Farmer Recognition. See Protection of Plant Varieties and Farmers' Rights Authority India <<http://plantaauthority.gov.in/index.htm>> accessed 04 September 2017. See also Chapter 5.

¹⁵⁴ Emphasis added. IPCOM Bill, s 203.1(f). The protected varieties here refer to the new plant varieties. See (n 148) above.

¹⁵⁵ IPCOM Bill, s 203(2).

also accords farmers the rights to save, use, multiply, and process seeds of protected varieties.

As discussed in Chapters 2 and 3, the prevalence of small-scale farming in Nigeria makes this farmers' rights provision important for the country.¹⁵⁶ With this provision, farmers are entitled to select and adapt farm-saved seeds of protected varieties to their local agro-climatic conditions. Section 203 further provides for farmers to obtain equitable share of benefits arising from the use of their plant genetic resources.¹⁵⁷ These farmers' rights which collectively seek to counterbalance plant breeder's rights were deleted from the IPC Bill.¹⁵⁸

Second, the IPC Bill excludes private use and research exceptions to breeder's rights that were in the IPCOM and previous IPRs Bills. Section 189 of the IPCOM Bill allows use of protected varieties for (i) acts done privately and on a non-commercial scale, and (ii) scientific research, experiments, and teaching.¹⁵⁹ The private and non-commercial use allows farmers to use the protected varieties on their holdings, such as to produce food consumed by the farmer and the farmers' dependents. The research exemption allows use of protected varieties for scientific research, including experiments to test or improve the variety as well for teaching purposes. This exception to breeders' rights is important not only to protect small-scale farming practices, but also to promote scientific research in Nigeria. Considering the plant breeding research activities undertaken in public research institutes and seed companies in Nigeria, this research exemption is invaluable to the country. In fact, even the UPOV 1991 Convention, which was established to strengthen plant breeder's rights, provides that compulsory exemption to breeders' rights includes acts done for private, non-commercial, and experimental purposes.¹⁶⁰

¹⁵⁶ See Chapter 3.

¹⁵⁷ IPCOM Bill, s 203.1(b).

¹⁵⁸ See IPCOM Bill, s 203 for the full list of farmers' rights.

¹⁵⁹ IPCOM Bill, s 189.

¹⁶⁰ UPOV 1991 Convention, art 15.

Third, the IPC Bill excludes the provision regarding the Nigerian government's power to use protected varieties and to grant compulsory licences when it is in the public's interest that was in the IPCOM and previous IPRs Bills. Section 191 of the IPCOM Bill gives the Nigerian government the power to authorise anyone to purchase, import, or produce registered varieties when it is in the public's interest to do so.¹⁶¹ Public interest includes concerns regarding food security, nutrition, health, biological diversity, and the development of any other vital sector of the economy.¹⁶² Similarly, Section 192 of the IPCOM Bill gives the Nigerian government the power to grant any qualified applicant compulsory licences to produce or sell the protected variety if the variety is not available to the public at a reasonable price.¹⁶³ Similar to the preceding paragraph, the UPOV 1991 Convention provides for compulsory licences to protect public interests, albeit subject to equitable remuneration of the breeders whose rights are limited.¹⁶⁴ Without doubt, these government interventions are important to protect Nigerians, as they prioritise public interests by ensuring access to plant varieties.

One important provision absent in the IPC Bill and previous IPRs Bills is benefit sharing. While the IPCOM Bill provides for farmers' rights to obtain equitable benefit sharing from the use of their genetic resources as mentioned above, the benefit sharing process and distribution mechanism was not clarified. Questions about benefit sharing as provided in the IPCOM Bill include the following: how are farmers and farming communities alerted about use of farmers' varieties and extant varieties? How can farmers and farming committees make claims about breeders' use of their plant genetic resources to develop new varieties? How are benefits derived from the use of these farmers' and farming communities' plant genetic resources disbursed? The ITPGRFA, the CBD, the Nagoya Protocol, as well as India's plant variety protection system can provide guides for these benefit sharing concerns. In particular, India's plant variety protection system provides for

¹⁶¹ IPCOM Bill, s 191.

¹⁶² IPCOM Bill, s 191.

¹⁶³ IPCOM Bill, s 192. Further details of the compulsory licence provisions are set out in Sections 192 to 198 of the IPCOM Bill.

¹⁶⁴ UPOV 1991 Convention, art 17. Section 196 of the IPCOM Bill also provides for 'reasonable compensation to the breeder.'

a National Gene Fund, where benefit sharing received from the use of registered varieties and revenues obtained from fees and royalties, among others, are deposited.¹⁶⁵ The Fund is then used to support farmers' and farming communities' activities, such as conservation of plant genetic resources.¹⁶⁶

The exclusion of the above provisions from the IPC Bill means it focuses solely on (commercial) plant breeder's rights. While it was previously noted that the plant variety protection section of the IPC Bill (like the previous IPRs Bills introduced in Nigeria) was inspired by the African Model Law, the deletion of the above farmers' rights provisions and exceptions to breeders' rights deviates from the underlying rationale for the African Model Law, which – as discussed in Chapter 4 – was to protect the interests of farmers, farming communities, and commercial breeders.¹⁶⁷ Thus, while the IPC Bill provides a *sui generis* plant variety protection system, this was not the type of *sui generis* system envisioned by Nigeria along with the other Global South WTO members at the TRIPS Council.¹⁶⁸ In fact, the IPC Bill provides a *sui generis* system skewed in favour of commercial breeders, which is even more restrictive for small-scale farmers than the UPOV 1991 Convention.

The only provisions favourable to small-scale farmers in the IPC Bill as it is currently worded are provisions for registering farmers' and extant varieties set out in Sections 173 to 175. Even these provisions lack substantive details which may hinder their implementation. Therefore, it is argued that it would be a disservice to the small-scale farmers in Nigeria who substantially contribute to the seed sector if the IPC Bill is passed in its current form. In addition, the exclusion of government use and compulsory licences could pose risks in the event of monopolistic practices, national emergencies, or extreme urgencies. The question for law and policy makers in Nigeria is: what is the vision for enacting a plant variety protection system in Nigeria?

¹⁶⁵ Indian Protection of Plant Varieties and Farmers Rights Act 2001, s 45.

¹⁶⁶ *ibid.*

¹⁶⁷ See Chapter 4.

¹⁶⁸ See Chapter 3.

6.4. Conclusion

This chapter has provided a further analysis on plant variety protection in Nigeria, building on the background set out in Chapter 2. To do this, the chapter employed insights from TWAIL (which draws attention to historical and politico-economic factors that shape plant variety protection law-making), as well as regime complex theory (which draws attention to the avenues through which overlapping legal regimes can shape plant variety protection laws at the national level). The TWAIL and regime complex theory insights, along with the discussions of the analytical frames devised from Chapters 4 and 5 contribute to the original analysis on plant variety protection in Nigeria presented in this chapter.

Specifically, this chapter explored the historical and politico-economic context in Nigeria during the pre-TRIPS, during TRIPS, and post-TRIPS periods which influences the plant variety protection *status quo* in the country. Next, it analysed the factors that influenced variations in plant variety protection systems in the Global South, namely trade agreements, regional associations, pressure from seed companies, UPOV office lobbies, and CSOs activism. Finally, it unpacks Nigeria's IPC Bill. These discussions are important to this thesis because they provide deeper insights into *why* Nigeria does not have a plant variety protection system, as well as *how* it can design and introduce the creative *sui generis* system suited to it. As such, it contributes to answering the second central research question posed in the thesis.

This chapter has found that while other Global South WTO members such as India and Thailand responded to the obligation under Article 27.3(b) of TRIPS by introducing Bills during the TRIPS negotiation period (1986 to 1994), Nigeria had other national realities that contributed to its inaction in implementing TRIPS. In particular, the country was under an authoritarian military administration which did not prioritise the implementation of international laws. As a corollary, the country was basically unstable; in fact, political instability reached its peak in the 1980s to 1990s in Nigeria. It experienced bouts of military coup d'états, which

made the political terrain volatile. Furthermore, the fall in oil prices in the 1980s negatively affected the Nigerian economy, which heavily relied on the oil export revenue. Thus, the Nigerian government sought to introduce programmes such as the SAP to stabilise the economy. It was these national economic and political issues that were the primary preoccupation in the country at the time when India and Thailand were discussing plant variety protection. Notably, with the return to civilian administration and gradual stabilisation of the economy from 1999, the silent plant variety protection landscape in Nigeria did not change.

Further analysis of the factors that have influenced variations in plant variety protection systems in the Global South within the Nigerian context shows that Nigeria does not expressly have trade agreements, regional associations, pressure from seed companies, and UPOV office lobbies, unlike the examples of African WTO members in Chapter 4. However, this situation may not remain the same for long for two reasons. First, Nigeria is part of the NAFSN under which it committed to reform its seed laws, albeit without specifying plant variety protection. Second, Nigeria's agriculture policy promotes a private-led agriculture sector which has promoted the involvement of national and multinationals in the country's agriculture sector, which may lead to the circulation of ideas on pro-UPOV plant breeders' rights in the country.

Yet, CSOs in Nigeria's agriculture sector have limited awareness about farmers' rights and plant variety protection in general. In addition, unlike India and Thailand where the CSOs have unifying *spirits*, the CSOs in Nigeria's agriculture sector have none; rather, they have a history of rivalry. In fact, the plant variety protection provisions in the IPC Bill introduced in 2016 presents an opportunity for the CSOs to circulate ideas about the importance of farmers' rights and exceptions to breeders' rights. This is where the CSOs' limited awareness about plant variety protection-related issues becomes glaring. The other two glaring issues arising from the IPC Bill is the general lack of public debates about the IPC Bill, as well as the non-existent IPRs policy in Nigeria. Implications of these loopholes are highlighted in the next chapter.

The next chapter concludes the thesis. It revisits the central and subsidiary research questions posed in this thesis, summarises the major findings, sets out recommendations for Nigeria and the Global South vis-à-vis plant variety protection, and proffers suggestions for future research. Overall, the next chapter will conclude that this thesis is timely and offers a useful way forward for Nigeria. This is because Nigeria still has the opportunity to introduce the creative *sui generis* plant variety protection system proposed which simultaneously protects interests of small-scale farmers and seed companies (commercial plant breeders), while also fulfilling its pending international obligations.

Chapter 7

Conclusions

This thesis analysed plant variety protection in the Global South, using Nigeria as a case study. Nigeria, along with other Global South WTO members, have an obligation to protect plant varieties under Article 27.3(b) of TRIPS, but Nigeria is yet to fulfil its obligations. Article 27.3(b) of TRIPS offers choice; it allows for WTO members to protect plant varieties through patents, an effective *sui generis* system, or a combination of systems. Global South WTO members express preference for the *sui generis* option at the TRIPS Council. However, there are variations in the translation of this Global South preference at the national level. While TRIPS does not refer to the UPOV 1991 Convention, Global South WTO members are increasingly acceding to it. The thesis explored the variations in plant variety protection in the Global South, to provide lessons for Nigeria. The thesis examined the African Group WTO members to understand how and why the UPOV 1991 Convention is proliferating within Africa. It also examined India and Thailand to understand how and why they were able to successfully introduce creatively designed *sui generis* systems as advocated for at the TRIPS Council. Therefore, this thesis is concerned with (i) plant variety protection laws – that is, what option under Article 27.3(b) of TRIPS is best suited to Nigeria; and (ii) plant variety protection law-making – that is, how can Nigeria introduce such system?

The thesis employed TWAIL and regime complex theory as methodological lenses for its analysis.¹ As discussed in the methodology section of Chapter 1, TWAIL is a critical legal approach that engages with international law from the perspective

¹ See 1.3: 'Methodology' in Chapter 1. For TWAIL, see for example, Makau Mutua, 'What is TWAIL?' (2000) The American Society of International Law Proceedings of the 94th Annual Meeting, Washington DC 31 ('What is TWAIL?'); James Thuo Gathii, 'TWAIL: A Brief History of its Origins, Its Decentralized Network and A Tentative Bibliography' (2011) 3(1) Trade Law and Development 26 ('TWAIL: A Brief History of its Origins'). For regime complex theory, see for example, Laurence R Helfer, 'Regime Shifting in the International Intellectual Property System' (2009) 7(1) Perspectives on Politics 39 ('Regime Shifting in the International Intellectual Property System'); Kal Raustiala and David Victor, 'The Regime Complex for Plant Genetic Resources' (2004) 58(2) International Organization 277 ('The Regime Complex for Plant Genetic Resources').

of the Third World.² TWAIL emphasises the importance of broad historical analysis as a way to understand the present and to rethink the future.³ Significantly, TWAIL adopts a narrative approach to legal writing. It seeks to produce narratives and counter-narratives that reflect the interests of the underrepresented or marginalised peoples in the Global South, which in this thesis focuses on small-scale farmers. In essence, TWAIL seeks to produce alternative knowledge about international law by sharing Third World experiences and aspirations.

TWAIL played two significant roles in this thesis. First, it provided the broad historical awareness to understand plant variety protection at the national, international and global levels. For example, the historical perspective helped to map out a rich analysis of plant variety protection in Nigeria as seen in Chapter 6. Second, TWAIL helped in understanding how ‘international law is made from below’; that is, how CSOs contribute to law-making at the national level, and how these national laws are gradually expanding the interpretation of international law as seen in Chapter 5. This attention to the reforms at the national level underscored the importance of learning from the plant variety protection law-making in India and Thailand. Without a doubt, exploring the plant variety protection law-making in other Global South countries provided useful insights for the analysis on plant variety protection in Nigeria in this thesis.

While TWAIL narratives and counter-narratives illuminate the perspectives, interests, and aspirations of Third World peoples, it is argued that it is insufficient to fully unpack plant variety protection as envisaged in this thesis. This is because beyond the obligation to protect plant varieties set out in Article 27.3(b) of TRIPS, there are further conflicting legal systems and principles in an array of partially overlapping non-hierarchical institutions governing plant variety protection. While this thesis is grounded in TWAIL, it adopted the regime complex theory as a supplementary methodological lens to highlight particular nuances in its analysis

² Mutua, ‘What is TWAIL?’ (n 1) 31-32; Gathii, ‘TWAIL: A Brief History of its Origins’ (n 1) 34-38.

³ Mutua, ‘What is TWAIL?’ (n 1) 31.

of the interactions between the inconsistent regimes governing plant variety protection.

Regime complexes are marked by the existence of several conflicting legal systems and principles that are created and maintained in distinct fora with the participation of different sets of actors.⁴ While TRIPS is a starting point for the obligation to protect plant varieties in this thesis, other relevant legal systems and principles governing plant variety protection are set out in the UPOV Conventions, the CBD, the ITPGRFA, as well as in bilateral and regional trade or investment agreements.⁵ As such, the regime complex theory provides insights into the ways in which actors interact with the overlapping legal regimes relevant to plant varieties.⁶

The regime complex theory played two significant roles in this thesis. First, it provided insights to horizontal and vertical regime shifting.⁷ Horizontal regime shifting involves moving treaty negotiations, law-making initiatives, or standard-setting from one venue to another.⁸ For example, Global South actors moved horizontally from the WTO to the FAO and the CBD to push for specific plant variety protection related principles such as farmers' rights, as well as access and benefit sharing principles.⁹ On the other hand, vertical regime shifting involves moving from multilateral venues to bilateral venues covering the same subject matter (such as trade or IPRs). For example, Global North actors, including the United States (US) and the European Union (EU) have moved vertically from the WTO to bilateral trade agreements in a bid to push for UPOV plant breeders' rights, as noted in the preceding paragraph.¹⁰

⁴ Raustiala and Victor, 'The Regime Complex for Plant Genetic Resources' (n 1) 279.

⁵ See Chapter 3 for discussions on the different legal systems and principles.

⁶ Helfer, 'Regime Shifting in the International Intellectual Property System' (n 1) 40.

⁷ See Chapter 1. Laurence R Helfer, 'Regime Shifting: The TRIPS Agreement and New Dynamics of International Intellectual Property Law Making' (2004) 29 *Yale Journal of International Law* 1, 13-18 ('Regime Shifting'); Peter K Yu, 'International Enclosure, the Regime Complex, and Intellectual Property Schizophrenia' (2007) 1 *Michigan State Law Review* 1, 15-16 ('International Enclosure, the Regime Complex, and Intellectual Property Schizophrenia').

⁸ Helfer, 'Regime Shifting' (n 7) 14.

⁹ See Chapters 1 and 3.

¹⁰ See Chapter 4.

Second, and as a corollary, the regime complex theory provides insights into the fragmentation of the institutions relevant to plant variety protection at the international and global levels, which is also reflected at the national level.¹¹ This fragmentation of institutions results in conflicting broadly worded legal systems and principles, as ‘it is extremely difficult to work out the fine detail of all contingencies *ex ante*.’¹² For example, as discussed in Chapter 3, the TRIPS obligation to protect plant varieties is broadly worded.¹³ While it provides three options – patents, *sui generis*, or combination of systems – it does not clarify what constitutes a *sui generis* system.¹⁴ Similarly, as also seen in Chapters 3, the provisions on farmers’ rights are not defined in the ITPGRFA as the negotiators were unable to agree on a definition because farmers’ situations and interests differed.¹⁵ Therefore, these broadly worded legal systems and principles are either shaped or constrained through implementation at the national level.

For some actors – particularly Global North countries – regime complexity provides the ‘cover’ to design preferred legislations.¹⁶ That is, with the existence of a variety of agreements relating to one subject matter, a country can choose to implement their preferred implementation of treaty obligations.¹⁷ While for other countries, particularly Global South countries, regime complexity enables the creation of ‘mandatory rules’ that eliminate or constrain the implementation of

¹¹ See Chapters 1 and 3. From the background on Nigeria in Chapter 2, it was seen that at the national level, the different government ministries with mandates to implement the obligations under TRIPS, the CBD, and the ITPGRFA are the ministries of trade, agriculture, environment, and justice. Yet, there is a lack of synergy amongst these ministries and their departments, parastatals, and agencies. See also table 2.1.

¹² See Chapter 3 for the discussions about the legal systems and principles relevant to plant variety protection. See also Raustiala and Victor, ‘The Regime Complex for Plant Genetic Resources’ (n 1) 302.

¹³ See Chapter 3.

¹⁴ *ibid.*

¹⁵ *ibid.*

¹⁶ For example, the United States (US) grants both patents and *sui generis* rights for plant varieties, while the European Union (EU) developed the UPOV Conventions which were tailored to suit their industrialised plant breeding systems. See Chapter 1 for the origins of plant variety protection at the national and international levels. See also Helfer, ‘Regime Shifting in the International Intellectual Property System’ (n 1) 40-41.

¹⁷ For example, the US grants both patents and *sui generis* rights for plant varieties, while the EU developed the UPOV Conventions which were tailored to suit their industrialised plant breeding systems. See Chapter 1 for the origins of plant variety protection at the national and international levels.

preferred systems (or alternative systems or principles).¹⁸ As such, the salient characteristics of the regime complex for plant varieties are regime shifting, fragmentation, incoherence, and inconsistency.¹⁹

In combining TWAIL with regime complex theory insights above, the thesis presents an original analysis on plant variety protection in Nigeria. The thesis breaks new ground by uncovering *why* Nigeria does not have a plant variety protection system, *why* it ought to have one, *what* type of system is best suited to it, and *how* it can introduce such system as seen in the next part.

¹⁸ This could be done through international organisations lobbies, pressure from industry, and bilateral or regional agreements as highlighted in the preceding paragraph. See Chapter 4. See also Helfer, *Regime Shifting in the International Intellectual Property System*' (n 1) 40-41.

¹⁹ Yu, *'International Enclosure, the Regime Complex, and Intellectual Property Schizophrenia'* (n 7) 16.

Table 7.1: Regime Complex for Plant Variety Protection

	TRIPS	UPOV	CBD	ITPGRFA
Dates	<p><i>Adopted:</i> 1994</p> <p><i>Entered into force:</i> 1 Jan 1995</p>	<p><i>Adopted:</i> 1961</p> <p><i>Entered into force:</i> 1968</p> <p><i>Revised:</i> 10 Nov 1972, 23 Oct 1978, and 19 Mar 1991</p>	<p><i>Adopted:</i> 5 June 1992</p> <p><i>Entered into force:</i> 4 June 1993</p> <p>Nagoya Protocol on Access and Benefit Sharing</p> <p><i>Adopted:</i> 29 Oct 2010</p> <p><i>Entered into force:</i> 12 Oct 2014</p>	<p><i>Adopted:</i> 3 Nov 2001</p> <p><i>Entered into force:</i> 29 June 2004</p>
Principal Actors	Global North (i.e. US, EU, Canada, Japan) Multinationals	Global North (i.e. Australia, Canada, EU, US) Seed industry	Global South (i.e. China, India, G77, select African countries) CSOs (i.e. Greenpeace, World Wildlife Fund)	Global South (i.e. Mexico, India, select Latin American, African, and Caribbean countries) CSOs (i.e. La Via Campesina, GRAIN, etc.)
Regime Objectives	To promote and enforce IPRs	To grant and protect breeders' rights	To promote the conservation and sustainable use of biological diversity; fair and equitable benefit sharing	To promote the conservation and sustainable use of plant genetic resources for food and agriculture; fair and equitable benefit sharing in harmony with the CBD
Regime Principles, Systems: Plant Variety Protection	Patents, <i>sui generis</i> system, combination of systems	Plant breeder's rights system	Access and benefit sharing principles	Farmers' rights; access and benefit sharing principles

Sources: Treaty texts, Rangnekar (2013), and author's additional inputs

7.1. Main Findings

To start with, the thesis posed these research questions:

Central research questions:

Considering the obligation for all WTO members to protect plant varieties set out in Article 27.3(b) of TRIPS, what type of plant variety protection system is best suited to Nigeria?

Cognisant of the Global North-Global South narratives and counter-narratives, alongside the interconnections between Article 27.3(b) of TRIPS, the UPOV Convention, the CBD, and the ITPGRFA, how can Nigeria design and introduce such plant variety protection system which is best suited to it?

Subsidiary research question:

Why are Global South WTO members increasingly adopting the UPOV plant breeder's rights system despite their advocacy at the TRIPS Council for sui generis systems that incorporate access and benefit sharing as well as farmers' rights principles?

These central and subsidiary research questions are important to understand the plant variety protection system best suited to Nigeria, as well as how it can design and introduce such a system. This is important because Nigeria still has pending obligations to protect plant varieties under TRIPS. Furthermore, Global South WTO members that collectively express preference for a creatively designed *sui generis* system at the TRIPS Council are increasingly joining UPOV. Thus, the thesis seeks to understand plant variety protection law-making and laws in the Global South in order to provide lessons for Nigeria.

The TWAIL and regime complex methodological lenses provide original contribution to literature on plant variety protection. The narrative approach adopted using the TWAIL lens revealed insights that other mainstream Global North analytical approaches do not. As seen below, the thesis has revealed how historical, political, and economic dynamics contribute to the materialisation of plant variety protection systems in the Global South. In extension, these dynamics explain the absence of a plant variety protection system in Nigeria. The regime complex lens revealed insights to strategies that constrain the implementation of preferred plant variety protection systems in the Global South, such as vertical regime shifting. That is, bilateral trade agreements through which Global South countries are pressured to adopt specific ‘TRIPS plus’ agreements, such as the UPOV 1991 Convention. In addition to the original methodological contribution, the thesis provides original empirical and analytical contribution to the literature on plant variety protection. The empirical findings from the semi-structured interviews in Nigeria alongside the novel analytical framework developed²⁰ contribute to the first comprehensive analysis of the plant variety protection landscape in Nigeria presented in this thesis.

The combination of these original insights result in the main findings set out below.

The thesis found that a *sui generis* plant variety protection system is best suited to Nigeria. This is because it provides the flexibility to protect the interests of different stakeholders, including small-scale farmers and commercial plant breeders, while incorporating provisions relevant to its national interests such as farmers’ rights alongside access and benefit sharing from the ITPGRFA and the CBD.²¹ In other words, the *sui generis* option provides the latitude for Nigeria to creatively design a TRIPS-compliant system contoured to suit Nigeria’s current realities.²² Importantly, with the *sui generis* option, Nigeria can take a positive

²⁰ Factors that contribute to plant variety protection law-making in the Global South: trade agreements, regional associations, pressure from seed companies, UPOV office lobbies, and civil society activism.

²¹ See Chapter 3 for the Plant Variety Protection Options under TRIPS.

²² See Chapter 2 for a background on Nigeria which maps out the formal and informal seed sector in the country. Nigeria has about 80 per cent small-scale farmers and over 134 seed companies.

action to introduce its own home-grown plant variety protection system, without the restrictions set out under the UPOV 1991 Convention.²³

However, the thesis found that the translation of this proposed *sui generis* system into domestic legal architecture is not a straightforward process. Indeed, the proposed *sui generis* system aligns with Nigeria's and other Global South WTO members' advocacy for *sui generis* systems at the TRIPS Council, yet lessons from the select Global South countries studied revealed that the translation of their rhetoric into domestic legal architecture has varied.²⁴ This allowed the thesis to make some speculations on plant variety protection law-making in the Global South. In addition to national historical and politico-economic dynamics, the thesis found that factors such as bilateral trade agreements, regional associations, pressure from private seed companies, UPOV office lobbies, and civil society activism have influenced the variations in plant variety protection systems in the Global South.²⁵

The first three factors have influenced African Group WTO members such as Kenya, Morocco, South Africa, Tanzania, and Tunisia, along with the 17 African Intellectual Property Organisation (OAPI) members, to accede to the UPOV 1991 Convention.²⁶ Although Article 27.3(b) of TRIPS does not mention the UPOV plant breeder's rights system as 'the' *sui generis* system, bilateral trade agreements with the US or the EU have specifically required countries such as Morocco and Tunisia to join UPOV.²⁷ Thus, despite the existing African Model Law which sets out comprehensive guidelines for African countries seeking to design *sui generis*

²³ This would be the case if Nigeria joins UPOV.

²⁴ See Chapters 4 and 5. The Global South countries studied were African countries that are members of the African Group, as well as India and Thailand.

²⁵ See Chapters 4 and 5. See also the analysis of these factors in the Nigerian context in Chapter 6.

²⁶ See Chapter 4. See also UPOV, 'Status in Relation to the International Union for the Protection of New Varieties of Plants as of 20 March 2017'

<<http://www.upov.int/export/sites/upov/members/en/pdf/status.pdf>> accessed 06 September 2017 ('Status in Relation to the International Union for the Protection of New Varieties of Plants as of 20 March 2017').

²⁷ See Chapter 4.

systems, African countries and regional organisations are increasingly joining UPOV.²⁸

In addition to the African UPOV members mentioned above, the African Regional Intellectual Property Organisation (ARIPO) – which has 19 members – has initiated the process of acceding to the UPOV 1991 Convention.²⁹ In this regard, ARIPO adopted the Arusha Protocol in July 2015. Similarly, the Southern African Development Community (SADC) – which has 15 members – has sought the help of the UPOV office in drafting its plant variety protection protocol.³⁰ ARIPO and SADC have a combined membership of 26 countries,³¹ while ARIPO, SADC, and OAPI have a combined membership of 43 countries. Thus, if ARIPO and SADC join UPOV, over 80 per cent of African countries would be UPOV members.³² This reflects the extensive influence regional associations have on the proliferation of the UPOV 1991 Convention in Africa.³³

Meanwhile, CSOs have contributed to the design of *sui generis* plant variety protection systems in Global South WTO member states such as India and Thailand.³⁴ What was unique about India and Thailand was that although they had pressures similar to the African Group members, the vibrant CSOs in these countries countered these pressures.³⁵ For example, while the pro-plant breeders' rights proponents in India such as the Seed Association of India and the UPOV office organised a seminar on plant variety protection which promoted the UPOV plant breeder's rights system, pro-farmers' rights CSOs also organised a counter

²⁸ *ibid.* Organisation of African Unity's Model Law for the Protection of the Rights of Local Communities, Farmers and Breeders and for the Regulation of Access to Biological Resources 2000 <<http://www.wipo.int/edocs/lexdocs/laws/en/oua/oua001en.pdf> > accessed 28 July 2017 (African Model Law).

²⁹ UPOV, 'Status in Relation to the International Union for the Protection of New Varieties of Plants as of 20 March 2017' (n 26).

³⁰ *ibid.*

³¹ Eight countries are members of both organisations: Botswana, Lesotho, Malawi, Mozambique, Namibia, United Republic of Tanzania, Zambia, and Zimbabwe.

³² Africa has 54 countries.

³³ See Chapter 4.

³⁴ See Chapter 5.

³⁵ *ibid.*

dialogue to promote a *sui generis* system.³⁶ The CSOs also circulated ideas about farmers' rights through rallies, protests, and media campaigns. Similarly, CSOs in Thailand protested against the Thai government's Free Trade Agreement (FTA) negotiations with the US and the EU respectively because these agreements included requirements for Thailand to accede to the UPOV 1991 Convention.³⁷

Significantly, although India and Thailand are ethnically diverse, the CSOs in these countries have unifying spirits. As such, the CSOs significantly shaped the *sui generis* plant variety protection systems in these countries.³⁸ Indian CSOs have Mahatma Gandhi's *Satyagraha*, while Thai CSOs have King Bhumibol Adulyadej's Sufficiency Economy philosophy and New Theory. In essence, India and Thailand had vibrant CSOs in the agriculture sector, as well as unifying forces which prompted them to collectively promote small-scale farmers' interests. The CSOs demystified plant variety protection-related issues, creating awareness about it in a way the small-scale farmers understood. Furthermore, the CSOs collaborated with international CSOs to promote their national and local advocacy. This shows the role of CSOs in shaping the exemplary *sui generis* plant variety protection systems in India and Thailand. As such, it contributes to answering the subsidiary research question concerning the reasons for contradiction between Global South WTO members' position at the TRIPS Council and their implementation of article 27.3(b) of TRIPS at the national level.

³⁶ *ibid.* See also Shaila Seshia, 'Plant Variety Protection and Farmers' Rights: Law-Making and Cultivation of Varietal Control' (6-12 July 2002) *Economic and Political Weekly* 37(27) 2741, 2744; M S Swaminathan and Vineeta Hoon, 'Methodologies for Recognising the Role of Informal Innovation in the Conservation and Utilization of Plant Genetic Resources: An Interdisciplinary Dialogue' (M S Swaminathan Research Foundation for Research on Sustainable Agricultural and Rural Development, CRSARD Madras, Proceedings No 9, 1994)

<<http://eprints.icrisat.ac.in/13165/1/RP-9914.pdf>> accessed 12 August 2017.

³⁷ See Chapter 5. Biodiversity Sustainable Agriculture Food Sovereignty Action Thailand (BIOTHAI), 'Fighting FTAs: The Experience in Thailand' (October 2007)

<<http://www.bilaterals.org/IMG/pdf/fightingFTA-en-Hi-2-b-experience-in-thailand.pdf>> accessed 23 August 2017; Genetic Resources Action International Network (GRAIN), 'Thai Farmers and Civic Groups Protest UPOV Lobby' (19 November 2013)

<https://www.grain.org/bulletin_board/entries/4833-thai-farmers-and-civic-groups-protest-upov-lobby> accessed 23 August 2017.

³⁸ See Chapter 5.

The thesis found that while countries such as India and Thailand were debating and designing *sui generis* plant variety protection systems in the 1990s, Nigeria was basically unstable.³⁹ Nigeria had its first main economic crisis in the early 1980s after the fall in oil prices.⁴⁰ This led to the introduction of Structural Adjustment Programmes (SAPs) from 1986 to 1993.⁴¹ Furthermore, Nigeria was under a series of military dictatorships in the 1990s, which involved coups and attempted coups. Thus, unlike India and Thailand, fulfilling international obligations – such as the plant variety protection obligation under TRIPS – was not a priority for Nigeria in the 1990s.⁴²

Although Nigeria's transition to civilian administration in 1999 returned stability to the country, there were no changes to the plant variety protection *status quo*. An analysis of the factors that influence variations in plant variety protection systems in the Global South reveals that Nigeria has not directly experienced any of the pressures that influence UPOV membership. In addition, Nigeria lacks vibrant CSOs that contribute to the design of *sui generis* systems. One key insight from this finding is that Nigeria is actually in a position to introduce a *sui generis* plant variety protection system suited to its national interests without having to resist pro-UPOV plant breeders' rights pressures.⁴³ Accordingly, in answer to the central research questions, this thesis makes a case for Nigeria to proactively introduce the *sui generis* plant variety protection system proposed.

Notably, the plant variety protection situation in Nigeria may not remain the same for long. This is because Nigeria has certain agriculture-related agreements and

³⁹ See Chapter 6.

⁴⁰ See generally, Ebenezer Ugorji, 'Privatization/Commercialization of State-Owned Enterprises in Nigeria: Strategies for Improving the Performance of the Economy' (1995) 27(4) Comparative Political Studies 537-60.

⁴¹ The World Bank, 'Nigeria -Structural Adjustment Program: Policies, Implementation, and Impact' (World Bank Report No 13053-UNI, 13 May 1994) ('Nigeria – Structural Adjustment Program') <<http://documents.worldbank.org/curated/en/959091468775569769/pdf/multi0page.pdf>> accessed 29 August 2017.

⁴² See Chapter 6.

⁴³ Unlike India and Thailand which had to counterbalance the pro-UPOV plant breeders' rights activists. See Chapter 5.

policies such as the G8 New Alliance for Food Security and Nutrition (NAFSN) and the Agricultural Promotion Policy: 2016-2020 (APP) which promote private sector-led agriculture.⁴⁴ From the precedents in other Global South countries such as Kenya, the active participation of private seed companies, especially multinationals, can lead to a push for a UPOV 1991 Convention-styled plant variety protection system in Nigeria. Furthermore, Nigeria has an IPRs Bill – the Industrial Property Commission (IPC) Bill 2016 – which includes plant variety protection provisions.⁴⁵

Unlike in India and Thailand, the plant variety protection part of this IPC Bill has not been subject of public discourse.⁴⁶ In fact, there is no public awareness about the plant variety protection provisions in this Bill. A number of reasons contribute to this. First, there is limited awareness about plant variety protection in Nigeria.⁴⁷ The few CSOs and academics that understand plant variety protection debates have not created awareness about this subject in Nigeria. Second, plant variety protection provisions are set out in one part of the IPC Bill – Part D.⁴⁸ As such, it is not as prominent as a distinct plant variety protection Bill. Third, with the similarly structured IPRs Bills introduced in the past, debates about IPRs reforms have focused on concerns about merging the different IPRs subject matters, that is, copyrights, trademarks, and patents, not on the plant variety protection provisions of the Bill.⁴⁹ Although there have been unsuccessful attempts at IPRs reforms in

⁴⁴ New Alliance for Food Security and Nutrition <<https://new-alliance.org/>> accessed 24 August 2017 (NAFSN); Federal Ministry of Agriculture and Rural Development (FMARD), *The Agriculture Promotion Policy (2016-2020): Building on the Successes of the ATA, Closing Key Gaps* (Federal Ministry of Agriculture and Rural Development 2016) <http://fmard.gov.ng/wp-content/uploads/2016/03/2016-Nigeria-Agric-Sector-Policy-Roadmap_June-15-2016_Final.pdf> accessed 17 July 2017.

⁴⁵ ‘A Bill for an Act to Provide for the Establishment of the Industrial Property Commission of Nigeria, Repeal of Trademarks Act Cap 436, LFN 1990 and Patents and Designs Act, Cap 344, LFN 1990 and make Comprehensive Provisions for the Registration and Protection of Trademarks, Patents and Designs, Plant Varieties, Animal Breeders and Farmers’ Rights and for Related Matters’ (HB 16.06.640, C 3399) <<http://placbillstrack.org/upload/HB640.pdf>> accessed 03 September 2017 (IPC Bill). This Bill was presented in Nigeria’s National Assembly on 8 June 2016.

⁴⁶ See Chapter 6.

⁴⁷ *ibid.*

⁴⁸ *ibid.*

⁴⁹ See Chapter 2.

Nigeria since the 1980s, the IPC Bill may be different as the pharmaceutical sector, interested in patents reforms in Nigeria, is actively involved in pushing for it.⁵⁰

In sum, the thesis makes a case for Nigeria to proactively introduce the *sui generis* system proposed. This is because Nigeria does not currently have express pressure to accede to the UPOV 1991 Convention, unlike the other Global South WTO members examined. Therefore, a positive action should be taken to introduce the *sui generis* system which protects small-scale farmers and commercial breeders, as well as national interests.⁵¹ With this *sui generis* system, Nigeria will fulfil its obligations under TRIPS, and also maintain the latitude to reform it as its seed sector develops.

7.2. Recommendations

As this thesis has shown, the *sui generis* option under TRIPS provides the flexibility to design a plant variety protection system suited to Nigeria's realities. With the insights from the analysis in this thesis developed from using TWAIL and regime complex, the following recommendations are made. Although the recommendations are tailored to Nigeria, they can also provide useful insights for other Global South WTO members. On reflection, this thesis also sets out recommendations on how to rethink the regime complex for plant variety protection to ensure it effectively facilitates Global South aspirations.

⁵⁰ The author's personal communication with Hon Chime Oji Agu, who presented the Bill at Nigeria's National Assembly. Other stakeholders that have been involved in pushing for industrial property law reform in Nigeria include the Intellectual Property Lawyers Association of Nigeria, Section on Business Law of the Nigerian Bar Association, and the Anti-Counterfeit Coalition of Nigeria.

⁵¹ See Chapter 6 for discussions on the IPC Bill.

7.2.1. Nigeria

Civil Society Organisations

CSOs are the main actors that contribute to the design of a creative *sui generis* plant variety protection system at the national level. However, there is limited awareness among Nigerian CSOs about plant variety protection. The thesis recommends that Union of Small and Medium Scale Farmers (USMEFAN), along with academics who understand the plant variety protection debates, should create awareness about plant variety protection related issues through seminars, workshops, policy briefs, media campaigns, and rallies in Nigeria. The CSOs and academics should also build alliances with regional and international CSOs such as the African Centre for Biodiversity (ACB), the Genetic Resources Action International Network (GRAIN) and the Gaia Foundation to monitor and contribute to plant variety protection law-making process in Nigeria.⁵² In particular, it is important for the CSOs to set aside ethnic rivalries and any other forms of differences to work collectively to promote a plant variety protection system that protects small-scale farmers' interests. Significantly, the CSOs and academics should ensure that the IPC Bill is not passed into law in its current form.

Industrial Property Commission Bill

This thesis recommends comprehensive amendments to the plant variety protection part of the IPC Bill.⁵³ First, the thesis suggests a reincorporation of the breeders' rights exemptions, farmers' rights, government use, and compulsory licence provisions that were in Sections 188 to 208 of the Intellectual Property Commission (IPCOM) Bill 2008. The exclusion of these provisions means that this Bill provides unrestricted plant breeders' rights. Second, the thesis suggests the incorporation of access and benefit sharing provisions which include the contents

⁵² African Centre for Biodiversity (ACB) <<https://acbio.org.za/>> accessed 07 September 2017; GRAIN <<https://www.grain.org/>> accessed 07 September 2017; the GAIA Foundation <<http://www.gaiafoundation.org/>> accessed 07 September 2017.

⁵³ See discussions on the Bill in Chapter 6.

of a benefit sharing agreement and mechanisms for disbursing such benefits to farmers. In this regard, the CBD and its Nagoya Protocol can provide useful guides for Nigeria. Third, the thesis suggests the incorporation of a comprehensive section that defines the key terms used in the Bill. For these, the texts of the CBD, the ITPGRFA, the African Model Law, the Indian Protection of Plant Varieties and Farmers' Rights Act 2001 (PPVFRFA), and the Thai Protection of Plant Varieties Act 1999 can provide useful guides for Nigeria.

This thesis further recommends changes to the institutional structure proposed in the IPC Bill. Section 11 of the IPC Bill provides for the establishment of a plant variety protection registry as a department within the IPC.⁵⁴ The IPC is to generally supervise the administration and enforcement of IPRs laws in Nigeria.⁵⁵ It consists of four departments, namely (i) the Patents and Designs Registry, (ii) the Trademarks Registry, (iii) the Administration and Finance Department, and (iv) the Planning, Research, and Statistics Department.⁵⁶ Instead of placing the plant variety protection registry in the IPC, the thesis recommends that a plant variety protection registry or office be established as an institution under the Agriculture and Rural Development. (FMARD). This is because the FMARD, which generally oversees agriculture and rural development, is better placed to oversee 'plant variety' - related issues than the IPC, which has a narrow focus on IPRs.

This thesis suggests that the FMARD establish a Plant Variety Protection Office that exclusively oversees plant variety protection. This Plant Variety Protection Office would be responsible for processing plant variety protection applications. Since the conditions for registering plant varieties include the 'distinct, uniform and stable' tests, the Plant Variety Protection Office would liaise with the National Centre for Genetic Resources and Biotechnology (NACGRAB), an agency under the Federal Ministry of Science and Technology (FMST) and the National Agriculture Seed Council (NASC), an agency under the FMARD. NACGRAB and

⁵⁴ IPC Bill, s 11(c).

⁵⁵ IPC Bill, s 4.

⁵⁶ IPC Bill, s 11(c).

NASC have experience with testing plant varieties for these conditions.⁵⁷ However, it is important to clarify the mandates of the Plant Variety Protection Office, particularly with regard to access and benefit sharing, which may cause tensions with other government ministries such as the Federal Ministry of Environment (FME) and FMST. Overall, the Plant Variety Protection Office should promote plant variety conservation and improvement in Nigeria in collaboration with relevant government institutions. A detailed IPRs policy which protects national interests could contribute to achieving the above, as recommended below.

Intellectual Property Policy

This thesis recommends that it is important for Nigeria to develop a national IPRs policy. Such a policy would clarify Nigeria's vision in all IPRs sectors including plant variety protection. It is this policy that would determine the objectives Nigeria seeks to achieve with its IPRs laws. As such, Nigeria should develop its IPRs policy to suit its socio-economic circumstances, technological capabilities, policy goals in other key sectors of the economy, and overall national goals. However, this would require the following. First, quantitative and qualitative research on the IPRs needs in Nigeria. Second, coordination among national institutions such as the FMARD, the FMST, the Federal Ministry of Industry Trade and Investment (FMITI), the Federal Ministry of Justice (FMJ), the Federal Ministry of Health, as well as the Federal Ministry of Information and Culture. Third, multidisciplinary public consultations involving:

- (i) Academics with specialisations in IPRs and other related disciplines, such as agriculture, politics, economics, development, health, investments, and science and technology

⁵⁷ The 'distinct, uniform and stable' conditions are prerequisites for registering and commercialising new varieties in Nigeria, as set out in the National Crop Varieties and Livestock Breeds (Registration, etc) Act, Laws of the Federation of Nigeria (2004) ch N27, and National Agricultural Seeds Act, Laws of the Federation of Nigeria (2004), ch N5.

- (ii) CSOs, legal practitioners, and stakeholders that could be impacted by the IPRs policies, such as farmers, farming communities, seed companies, research institutions, scientists, pharmaceutical companies, publishers, authors, and musicians

It is important to note here that there is no universal IPRs policy template for countries. Countries' IPRs policies vary depending on their socio-economic circumstances. The IPRs policy can be subject to periodic revisions to reflect a country's changing circumstances. Thus, IPRs policymaking should be nuanced and calibrated. While it has been recommended that Nigeria conducts extensive consultations at the national level to develop its IPRs policy, it can also seek technical assistance from organisations such as WIPO. However, it is important for Nigeria to specifically negotiate the terms of technical assistance to ensure that it aligns with its national interests. This also depends on identifying and articulating Nigeria's IPRs policy as well as expressly setting out its technical assistance requirements. Ultimately, a carefully designed national IPRs policy would clarify Nigeria's objectives for reforming or introducing IPRs systems, including a plant variety protection system.

7.2.2. Regime Complex for Plant Variety Protection

First, the thesis recommends that Global South WTO members maximise the flexibility provided in Article 27.3(b) of TRIPS. In other words, Global South WTO members should implement the obligation to protect plant varieties under Article 27.3(b) of TRIPS in ways that suit their national interests and realities. Particular attention should be paid to avoid bilateral trade and investment agreements or other forms of lobbies and pressures that specify certain plant variety protection systems which may be unsuited to their realities, such as patents and UPOV plant breeders' rights systems. At the TRIPS Council, Global South WTO members should maintain their common position which promotes the design of creative *sui generis* plant variety protection systems at the national level that incorporate provisions from the CBD and the ITPGRFA.

Second, this thesis recommends that one way for state and non-state Global South actors to rethink their *sui generis* plant variety protection system advocacy is to actually design a guide international *sui generis* system. This recommendation is proffered because of the conflicting legal systems and principles relevant to plant varieties (regime complex), which some Global South WTO members lack the capacity to reconcile in ways that are suited to their national interests. This guide international *sui generis* system should incorporate the counter-hegemonic legal principles Global South actors push for, such as access and benefit sharing (including disclosure of origin and prior informed consent) alongside farmers' rights. These legal principles are currently set out in different international agreements, namely the CBD, the ITPGRFA, and the proposed WIPO Genetic Resources Treaty.

The proposed international *sui generis* system would pull together all the relevant provisions in a way that is generally suited to the Global South. The rationale for this international *sui generis* plant variety protection system, similar to that of the African Model Law, would be to provide practical guidelines for Global South countries seeking to design a *sui generis* system. However, the proposed international *sui generis* system should not be prescriptive. In other words, Global South countries should be able to tailor the guidelines to suit their national realities. This *sui generis* system is important because while Global North WTO members can easily point to the UPOV plant breeders' rights system as their template or model for a *sui generis* system, Global South WTO members have no similar international template or model to refer to.⁵⁸

Third, this international *sui generis* plant variety protection system would require collaboration among state and non-state actors at the regional and international levels. The ability of these Global South actors to develop this *sui generis* system would depend on the coordination and circulation of ideas among the Global South

⁵⁸ Nonetheless, as seen in this thesis, the African Model Law, the Indian Protection of Plant Varieties and Farmers' Rights Act 2001 (PPVFR), and the Thai Protection of Plant Varieties Act can serve as useful references for Global South WTO members.

actors. Furthermore, the proposed international *sui generis* system should be introduced in the United Nations (UN), which currently favours Global South positions vis-à-vis plant variety protection.⁵⁹ Although this increases the number of overlapping agreements in the regime complex for plant variety protection, it simultaneously harmonises provisions of some of the varied treaties to present one comprehensive international *sui generis* plant variety protection model from the Global South. The UN agency governing this international *sui generis* system would also provide technical support and assistance to Global South countries seeking to design or reform national plant variety protection systems.

7.3. Suggestions for Future Research

Chapter 2, which sets out a background on Nigeria, revealed that there is limited documentation of small-scale farmers' varieties and traditional farming practices. To understand farmers' contributions to plant variety conservation and improvement, it is important that further extensive multidisciplinary research be conducted to document farmers' varieties of different crops, along with their associated farming practice or knowledge. This would create a basis for informed decisions on how to conserve, improve, and protect farmers' varieties. Further research could also explore the possibilities and provisions of the proposed international *sui generis* plant variety protection system that carefully pulls together the different legal principles advocated by the Global South.

Without doubt, small-scale farmers make an important contribution to agricultural biodiversity in Nigeria. They dominate the agricultural landscape in the country and predominantly produce the food consumed. As such, it is important that their rights are effectively protected. Nigeria still has the opportunity to proactively introduce a *sui generis* plant variety protection system that protects the interests of its small-scale farmers, while simultaneously protecting commercial breeders and fulfilling its international obligations. This is because it has no express pressure

⁵⁹ The CBD and the ITPGRFA are legally binding UN treaties.

otherwise. The type of plant variety protection system introduced in Nigeria will shape the future of its food system. It could have an influence on small-scale farmers' access to seeds, small-scale farmers' livelihoods, and corporate control of seeds in the country. As such, this thesis is both timely and offers a useful way forward.

Appendix 1: List of Interviewees

	Interviewee	Organisation and Position*
1.	James Magaji	Farmer
2.	Danjuma Magaji	Farmer
3.	Thomas Haruna	Farmer
4.	John Nyawosa	Farmer
5.	Reuben Danladi	Farmer
6.	Moses Abila	Farmer
7.	Danlami Haruna	Farmer
8.	Gbenga Shoga	Farmer
9.	Jimoh Obadimeji	Farmer
10.	M Balogun	Farmer
11.	A Olaore	Farmer
12.	Usman Hassan	Farmer, Director, Arewa-Kebbi Investments Nigeria
13.	Femi Oke	Farmer, Chairman, Lagos State Chapter, All Farmers Association of Nigeria
14.	Prince Ike Ubaka	Farmer, National President, All Farmers Association of Nigeria
15.	Prince Peter Bakare	Farmer, Deputy Executive Secretary, Federation of Agricultural Commodity Associations of Nigeria
16.	Akin Gbadamosi	Farmer, Secretary General Federation of Agricultural Commodity Associations of Nigeria
17.	Segun Adewumi	Farmer, President, Cassava Growers Association of Nigeria
18.	Dr Olaseinde Arigbede	Farmer, National Coordinator, United Small and Medium Scale Farmers Association of Nigeria
19.	Oladeinde Ayeni	Editor, Food-Farm News
20.	Mariam Mayet	Founder and Director, African Centre for Biodiversity
21.	Prof Abraham Ogunbile	Managing Director, Premier Seed Nigeria Ltd.
22.	Interviewee A	Alheri Seeds Nigeria
23.	Oladeinde Ayeni	Editor, Food - Farm News
24.	Dr Olutayo Adeniyi	Senior Researcher, Institute of Agricultural Research and Training, Obafemi Awolowo University
25.	Dr Chiedozi Egesi	Plant Breeder/Biotechnologist, Assistant Director, National Root Crops Research Institute, Umudike
26.	Dr Godwin Asumugha	Agricultural Economist/Director, National Root Crops Research Institute, Umudike

27.	Prof Ike Nwachukwu	Department of Agricultural Extension and Rural Sociology Michael Okpara University of Agriculture, Umudike
28.	Dr A O Olojede	System Agronomist/Assistant Director National Root Crops Research Institute, Umudike
29.	Dr Nwofia Emeka	Agronomist, Department of Agronomy Michael Okpara University of Agriculture, Umudike
20.	Dr Sunday Aladele	Director and Registrar, National Centre for Genetic Resources and Biotechnology, Federal Ministry of Science and Technology
31.	Prof Michael Abberton	Head of the Genetic Resources Centre, International Institute of Tropical Agriculture
32.	Shafiu Adamu Yuari	Trademarks, Patents and Designs Registry Commercial Law Department, Federal Ministry of Industry, Trade and Investment
33.	Simeon Onyerikwu	Senior Trade Officer, Trade Department, Federal Ministry of Industry, Trade and Investment
34.	Zidafamor Ebiarede Jimmy	Deputy Director, Seed Production, National Agricultural Seeds Council, Federal Ministry of Agriculture and Rural Development
35.	Yarama D Ndirpaya	Deputy Director/Program Manager, Natural Resource Management, Agricultural Research Council of Nigeria, Federal Ministry of Agriculture and Rural Development
36.	Nwosa Lucky	Director, Technical Acquisition and Research, National Office for Technology Acquisition and Promotion, Federal Ministry Science and Technology
37.	Oluwagbeminiyi Popoola	Head Legal Unit, National Biotechnology Development Agency, Federal Ministry of Science and Technology
38.	Prof Lucy Ogbadu	Director-General, National Biotechnology Development Agency, Federal Ministry of Science and Technology
39.	Rufus Ebegba	Director-General National Biosafety Management Agency, Federal Ministry of Environment
40.	Benedicta Falana	Access and Benefit Sharing Focal Point, Nigeria, Federal Ministry of Environment

41.	Dr John Onyekuru	Deputy Director, Forestry Conservation, Federal Ministry of Environment
42.	Simon Joshua	Director, Environmental Quality Control, National Environmental Standards and Regulations Enforcement Agency, Federal Ministry of Environment
43.	Dr Fortune Ihua- Maduenyi	Committee Clerk, Senate Committee on Agriculture and Rural Development, National Assembly Abuja
44.	Godwin Iheanubike	Assistant Director, Legal Drafting Department, Federal Ministry of Justice
45.	John Asein	Nigerian Copyright Commission
46.	Uche Nwokocha	Partner, Intellectual Property Rights, Aluko & Oyebode
47.	Prof Ikechi Mgbеoji	Partner, Blackfriars LLP Professor, Osgoode Hall Law School
48.	Prof Ruth Okediji	Professor, University of Minnesota Law School
49.	Prof Oyelowo Oyewo	Professor, Faculty of Law, University of Lagos
50.	Prof Adebambo Adewopo	Partner, L & A Legal Consultants Professor, Nigerian Institute of Advanced Legal Studies
51.	Prof Bankole Sodipo	Senior Partner, G. O Sodipo & Co Professor, Faculty of Law, Babcock University
52.	Prof Johnson Ekpere	Former Secretary-General of the Scientific, Technical and Research Commission of the Organisation of African Unity

- *Positions and titles at time of interviews (2015)*

Appendix 2: Fieldwork Interview Questions

Farmers/ Farming Communities

1. Do you buy seeds from seed companies? Please give reasons for your choice
 - a. If you buy from the seed companies, are you happy to buy every planting season?
 - b. Do you save and replant the seed you buy from seed companies?
2. Do you plant local traditional varieties? Please give reasons for your choice.
3. Do you share/exchange seeds with other farmers?
4. Do you sell the seeds from previous harvests?
 - a. If yes, is selling seed an important source of income for you?
5. If a company or research institute asks for some of your varieties/seeds, and uses it to develop improved varieties that is later protected, would you want to receive a share of the profit?
6. Do you know about plant variety protection? Would you be interested in protecting your traditional varieties?

Other Interviewees

1. Considering Nigeria's obligation to protect plant varieties under TRIPS, what type of plant variety protection system do you think is best suited to Nigeria and why?
2. As Nigeria is also signatory to the CBD and ITPGFRA, what forms of systems should it have for access- benefit sharing, and farmers' rights? What should be the main elements of these principles in Nigeria?
3. Do you think farmers should be allowed to freely save, use, reuse, exchange and sell protected seed?
4. Considering the proliferation of plant breeder's rights systems in Africa, are there any good reasons for Nigeria to accede to the UPOV 1991 Convention?
5. The move to reform industrial property law in Nigeria commenced in the 1980s, why do you think there have been no industrial property law reforms

to date, and what is your opinion about the breeders' rights and farmers' rights provisions in the IPCOM 2008 Bill?

6. For CSOs – how is your organisation involved in plant variety protection related issues in Nigeria?
7. For government officials – how is your institution involved with implementing TRIPS, CBD or ITPGRFA?

Appendix 3: Fieldwork Consent Form



Participant identification number where applicable

CONSENT FORM

Tentative Project Title: Interrogating the Political Economy of Intellectual Property Rights for Plant Varieties through the lens of the Global South: The Case of Nigeria

Name of Researcher: Titilayo Adebola

I agree to take part in the above study and am willing to:

- a. Be interviewed ()
- b. Have my interview audiotaped ()
- c. Be identified and named in this research. ()
- d. Be further contacted via e-mail or telephone ()

I understand that my information will be held and processed for the following purposes:

- a. The researcher's doctoral thesis to be submitted to the University of Warwick Law School
- b. Books, research papers, and reports that the researcher publishes

I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason without being penalised or disadvantaged in any way.

Name of Participant

Date

Signature

Researcher

Date

Signature

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- JEM AG Supply Inc, DBA Farm Advantage Inc et al v Pioneer Hi-bred International Inc* (2001) 534 US 124
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- Plant Cells/Plant Genetic Systems* (1995) T 0356/93 (EPO)
- Sidney A Diamond, Commissioner of Patents and Trademarks v Ananda M Chakrabarty et al* (1980) 447 US 303
- Vernon Hugh Bowman v Monsanto Company et al* (2013) US 133 S Ct 1761

Bilateral Agreements, Bills, Guidelines and Laws

- African Growth and Opportunity Act 2000
- African Union Practical Guidelines for the Coordinated Implementation of the Nagoya Protocol in Africa 2015
- Agreement on Trade, Development and Cooperation between the European Community and its Member States, of the one part, and the Republic of South Africa, of the other part (4 December 1999) OJEC L311/3
- Agreement on Trade-Related Aspects of Intellectual Property Rights (1994) Annex 1C, 33 ILM 81
- Arusha Protocol for the Protection of New Varieties of Plants (African Regional Intellectual Property Organisation, July 2015)
- Bangui Agreement Relating to the Creation of an African Intellectual Property Organisation, Constituting a Revision of the Agreement Relating to the Creation of an African and Malagasy Office of Industrial Property (Bangui, Central African Republic, 2 March 1977), revised on 24 February 1999, entered into force on 28 February 2002
- Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization
- Constitution of Kenya (2010)

Convention on Biological Diversity (5 June 1992) 1760 UNTS 143, 31 ILM 818

Council Regulation (EC) 2100/94, latest amendment Council Regulation (EC) 15/2008 of 20 December 2007 on Community Plant Variety Rights

Environmental Management and Co-ordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations 2006

Euro-Mediterranean Agreement establishing an Association Between the European Communities and their Member States, of the one part, and the Kingdom of Morocco, of the other part (18 March 2000) OJEC L70/2

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