

Review

Understanding Public Support for European Protected Areas: A Review of the Literature and Proposing a New Approach for Policy Makers

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Abstract: Protected Areas are the most widely applied policy tool for biodiversity conservation. In Europe, protected areas are expected to significantly increase as the new EU Biodiversity strategy sets an ambitious target of 30% of land and 30% of water to be protected by 2030. Despite the popularity of this environmental policy, understanding variations in the level of public support for protected areas remains underexplored. This is an important area of research, considering that, in order for protected areas to be effective, they need to be supported by most users, including local communities and visitors. In this paper, we reviewed theoretical and empirical evidence explaining the level of support for protected areas and proposed a new approach when designing and designating protected areas in Europe. This approach models the process of the introduction of a new protected area as a policy intervention within a socio-ecological system. Specifically, it models how protected area social outcomes or impacts are conditioned and contextualised by numerous intervening factors relating to the social context and governance and management system to influence local actors' attitude and active support for the protected area. This new approach aims to assist policy makers, conservation practitioners and scientists to plan actions that assist in increasing the level of public support for protected areas in the context of the post 2020 Biodiversity Strategy of the European Union.

Keywords: protected area management; natural resource management; public participation; biodiversity conservation; EU biodiversity strategy; public acceptance; social acceptability; social effectiveness

1. Introduction

Along with climate change, the rapid loss of biodiversity is proving to be a challenging environmental issue for policy makers [1]. Designating protected areas is a commonly used policy tool to halt biodiversity loss. They refer to clearly defined geographical spaces, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values [2]. Although the primary aim of protected areas is to protect natural resources, it is now widely recognised that they should also promote sustainable socio-economic priorities [3].

In the European Union, 26% of land and 11% of seas are currently under protected status [4], making Europe the region with the largest number of protected areas internationally [5]. According to the IUCN adapted definition by the European Environment

Agency [6], these areas may include *'any area of sea, lakes, rivers or land that has been identified as important for conservation of nature and managed for this purpose'* and they are divided into seven broad categories. In Europe, these areas are also protected under a number of different designations including the NATURA 2000 network and the Emerald network [7]. Europe's network of protected landscapes and seascapes is expected to be further expanded following the publication of the new EU biodiversity strategy, which aims to protect 30% of land and 30% of water by 2030 [4]. This 'path to recovery' seeks to halt biodiversity loss and also to provide benefits to people in Europe [4].

An increasing literature from European case studies highlights the important role of stakeholders for the designation of effective protected areas [8–16] as these areas can be a significant source of conflict between local communities, visitors and conservationists [17,18]. Conflicts often emerge due to impacts on livelihoods, recreation and culture [19]. For example, in marine protected areas, conflicts often emerge between local fishers and those whose income is dependent on tourism as an increased number of visitors often competes with fishing activities [20]. In terrestrial protected areas, conflicts between conservationists and farmers may emerge due to biodiversity conservation regulations being imposed, limiting agricultural activities with a significant economic impact for farmers [21].

Thus, the governance and management frameworks of protected areas often impose significant restrictions on those who use these areas of high biodiversity value, limiting or at least regulating activities within their boundaries. Rather than shortfalls in funding [22], the failure to have support across the range of different types of stakeholders associated with the area is a key reason why some European protected areas have been unsuccessful and have a low level of public support [23].

Public support for a protected area can take several forms including attitude public support (for example, an individual stating that they support the protected area) and active public support (for example, responsible environmental behaviour when using the protected area or volunteering in activities supporting the work of a park authority such as litter picking [24]). Low levels of attitude support may be associated with protests against a protected area and with conflicts between different stakeholders [25]. Low attitude support can translate into a large proportion of the local population not complying with regulations, resulting in the creation of paper parks [26] which is a significant concern for some areas of the European region [27].

Considering the ambitious targets of the EU Biodiversity strategy, a key question that needs to be urgently addressed is: why are some protected areas supported more than others, leading to differentiated levels of support? A number of factors have been proposed in order to explain public support for protected areas. These have originated from different scientific fields such as policy sciences, behavioural sciences and the ecosystems-based management approach. Despite these contributions, currently no framework exists that aims to place public support of protected areas at its core, taking into consideration both the different systems affecting the management and governance of protected areas and also the different socio-economic conditions that may lead to differentiated levels of support and social effectiveness.

In this paper, we initially explore factors that may influence the level of support for protected areas by local actors as these have been identified by different frameworks and theories drawing also from case studies in Europe. We then bring together this evidence and propose a new way of exploring support for protected areas, taking into consideration the interactions between the governance and management system, the impacts of the protected area for local actors and local socio-economic characteristics. By addressing this gap and proposing a new assessment process for policy makers and practitioners, we facilitate the process of findings ways to increase public support for protected areas and promote social equity within these socio-ecological systems.

2. Factors Influencing Support of Protected Areas: A Review of the Literature

Nowadays, it is widely recognised that protected areas and in general, the management of natural resources needs to be seen as part of a broader context of interactive systems. According to the socio-ecological systems literature, there are four key subsystems that are important in understanding the processes and outcomes of a socio-ecological system: the resource system; the governance system; resource units; and actors [28]. These subsystems interact with each other, and several parameters have been identified that can be used as explanatory factors to define the characteristics of each subsystem [29]. The socio-ecological systems framework and other similar frameworks such as the ecosystem-based management approach [30,31] allows us to move away from an 'island' approach in managing protected areas [32] to a more holistic approach [33].

Actors are a key part of this holistic approach, having a significant role in the policy process. McGinnis and Ostrom [34] provided a useful definition of actors in the context of protected areas as '*individuals who use the park in diverse ways for sustenance, recreation, or commercial purposes*'. According to this definition, local residents who use the area for sustenance, recreation or commercial purposes are key users affected by the designation. When reviewing existing studies, focusing on what determines public support by local communities for environmental policies, we identified six broad categories of explanatory factors: social capital, values, norms and behavioural control, place attachment, social impacts and socio-economic attributes.

2.1. Social Capital

Social capital is a broad term which often reflects the level and type of networks within a community and the level of trust that has been developed within these networks [35]. Trust is expected to influence both attitude and active support in protected areas [36]. It is linked with issues of transparency in protected areas management [37,38], which is especially important when a different governance and management system is proposed [39], while the type of networks and the frequency of opportunities to engage in decision making and management also influence the level of support for protected areas [38]. Berkes [40] highlighted that sharing information through these networks assists in developing a unified vision, which can then translate into action. In the context of protected areas, it has been shown that higher participation in networks promoting environmental values is linked to more positive perceptions of proposed protected areas management scenarios [41]. Dense social networks assist in the dissemination of information regarding the provision of services arising from biodiversity conservation initiatives [39].

Limited studies have explored the role of social capital on public support for protected areas in Europe [41] but there is some evidence regarding the role of trust and networks in this context. Studies in Switzerland, Poland and Norway [42,43] have all found that the level of trust towards management authorities significantly influences how strongly people support protected areas. Regarding networks, Di Franco et al. [44] found that denser networks with higher levels of participation in Mediterranean protected areas led also to higher levels of support for these areas. Similarly, Grodzinska-Jurczak and Cent [17] (Poland), Dimitrakopoulos et al. [45] (Greece), Gall & Rodwell [38] (UK) and Stringer and Paavola [46] (Romania) all highlight that opportunities to participate in decision making and the flow of information on new policies introduced can significantly influence attitudes towards protected areas. Thus, the development of dense networks that allow more opportunities to participate in decision making along with higher levels of trust within these networks is expected to result in a higher level of support for European protected areas. The importance of networks is also closely linked with the level and extent of knowledge disseminated by these networks. Knowledge can be produced through earlier and recent experiences. Cinner et al. [47] highlighted that, in conditions where knowledge regarding the impact of humans on ecosystems is high, implementation of effective co-management was facilitated. This knowledge may be specific to the protected area, such as the ongoing supply of ecosystem services to people, which can vary between

communities and depend on the ecosystem, the socio-economic system being impacted and on the governance framework introduced by the protected area [48].

2.2. Values

Local and personal values are also a significant factor that can help understand the relationship of locals with the natural environment. Ecosystem-based management approach has at its core the need to have a deep understanding of the local values and how the relationship of locals with the protected landscape and seascape has changed through time [31]. Values are also a core element in the value-belief-norm theory [24] in order to understand pro-environmental behaviour and attitudes. The theory has been used to explain the level of support for environmental policies including biodiversity conservation [49]. VBN considers norms as a key element, but also introduces values as a significant factor in understanding the process leading to responsible (or irresponsible) environmental behaviour. Value-belief-norm theory proposes that values influence an individual's environmental worldviews, which are divided into three main categories: (a) biospheric, defined as a set of associated values for the environment and the biosphere (e.g., protecting the environment); (b) altruistic, defined as a set of values for the welfare of others (e.g., equality, being helpful); and (c) egoistic, defined as values aiming to maximize personal benefit in various ways (e.g., social status, wealth) [50]. Biospheric and altruistic values are expected to positively influence environmental worldviews, while egoistic values have a negative influence [51]. Limited evidence exists regarding the role of local and personal values on public support for protected areas. However, Fornara et al. [52] have recently published results from seven European countries showing that pro-environmental values also influence environmental behaviour in the region. This shows that values need to be further incorporated in decision-making processes in European countries and additional research is needed in this direction.

2.3. Place Attachment

Values and attitudes towards a specific location have also been considered as a key concept in understanding responsible environmental behaviour through the role of place attachment [53,54]. Most researchers have operationalised place attachment using place identity and place dependence as the two key dimensions. According to Brown et al. [55], place identity refers to 'the mixture of feelings about specific physical settings and symbolic connections to place that define who we are', while place dependence refers to 'the functional or goal-directed connections', such as the use of natural resources. Dimensions of place attachment, such as emotional bonds and place-related symbolic meanings, influence protected area actors' reactions [54,56] and perceptions regarding the impacts of a protected area [57]. Several studies have been published exploring the role of place attachment on perceptions regarding protected areas. Buta et al. [58], for example, found that place attachment in Romania predicted to some extent pro-environmental attitudes and behaviour. Similarly, Huber & Arnberger [59] found that place attachment influenced the level of acceptance of the Lungau(-Nockberge) nature reserve in Austria. It is also interesting to note that according to Petrova et al. [60], place attachment remained strong despite the introduction of environmental regulations in protected areas limiting people's activities in North Macedonia and the Czech Republic.

2.4. Norms and Behavioural Control

Retaining an element of cost-benefit analysis whilst highlighting the role of social norms, one of the other most influential theories in explaining support for environmental policies is the theory of planned behaviour [61]. An improvement of the theory of reasoned action [62], the theory of planned behaviour argues that an individual's expected outcome from a specific action influences their decision about how to act. The theory of planned behaviour also places particular emphasis on the importance of people's beliefs and attitudes about a certain behaviour, overcoming the conceptualisation of behaviour decisions

as purely rational and based on clearly known ‘facts’ about a situation. In the theory of planned behaviour, Ajzen [63] asserted that the most important predictors of behaviour are intentions, which are influenced by attitudes, subjective norms, and perceived behavioural control, referring to how easy or difficult it is for an individual to perform a specific behaviour. Studies using the theory of planned behaviour have mainly focused on explaining visitor perceptions (e.g., [64]) rather than engaging with the concerns of other stakeholders, such as local communities. In one of the few studies applying the framework to the local communities living around protected areas, Anton & Lawrence [65] confirmed the key assumptions of the theory of planned behaviour theory in relation to protests against the designation of some protected areas. Users who had positive attitudes about the potential impact of protesting, who thought that most people around them were protesting, and who had greater perceived behavioural control, were more likely to protest [65]. Despite the scarce application of the theory of planned behaviour in the protected areas literature, it remains a useful framework that can explain the level of support for proposed protected areas.

2.5. Social Impacts

In recent years, there have been growing calls for detailed social impact assessments to be conducted within protected areas [66,67], as perceived impacts influence the level of acceptance of Protected areas [68]. Social impacts are defined here as *the intended and unintended social consequences, both positive and negative, which occur because of the designation of a PA and any social change processes invoked by a PA* [23]. These impacts may include the perceived costs and benefits associated with the designation of the protected area on a variety of issues, such as quality of life, personal income, mental health and recreational activities [23,66]. They may also include issues such as impacts on the landscape or seascape [69,70], and general impacts on the natural environment [71]. This is an emerging field of research in Europe. Although currently no widely accepted tool for social impact assessment exists in Europe, there are several studies that highlight the important role of protected areas for local communities especially considering impacts on recreation, agriculture and environmental education [10–12]. Furthermore, Bennett et al. [68] recently found that impacts perceived by fishers were an explanatory parameter for the level of support of marine protected areas in the Mediterranean Sea. Similarly, Buta et al. [58] found that when people considered that there are social benefits linked with a protected areas, more positive attitudes and perceptions were recorded.

2.6. Socio-Economic Attributes

Finally, demographics are important in order to understand the differential levels of support for protected areas [72]. In their review of forest protected areas, Coad et al. [73] noted how local livelihood impacts varied between men and women, between different ethnic groups, and how an individual’s socio-demographic profile influenced their use of resources, tenure rights, and power. The location of an individual (in relation to the protected area) is also expected to influence their perceptions about the designated area [74–76]. The perceived benefits and expected impacts are influenced by how often and in what ways people use natural resources from the protected area [77]. Furthermore, risk perceptions can also be influenced by people’s proximity to a protected area [78]. An individual’s occupation also exerts a particularly significant role [79,80] as it typically determines the level of dependence on natural resources, which is another second-tier parameter in the socio-ecological systems framework [29]. People involved in agricultural and fishing activities are often the ones whose livelihoods are more affected by changed governance arrangements, usually leading to negative perceptions and opposition towards the protected area [81].

3. Proposing a New Way of Exploring Public Support for European Protected Areas

From the analysis above, it is evident that there are a variety of factors that have been identified as important when researchers and policy makers try to understand the public's views about protected areas. Furthermore, different theoretical approaches have also different starting points, with behavioural sciences focusing more on the individual while the socio-ecological systems framework takes a more holistic approach, incorporating elements from the governance and the ecological system as well. However, existing frameworks do not provide a link between the different factors that have been identified in the literature so far and also do not provide a framework for practitioners to support them in understanding public acceptance of protected areas.

Drawing evidence from the different scientific fields mentioned above, in this part of the paper, we propose a new way of exploring and understanding public support for protected areas in Europe, referring both to attitude and active support, which can be useful especially when designating new protected areas or expanding existing ones. This approach models the process of the introduction of a new protected area as a policy intervention within a socio-ecological system. Specifically, it models how protected area social outcomes or impacts and public perceptions thereof are conditioned and contextualised by numerous intervening factors relating to the social context and governance system to influence local actors' attitude and active support for the protected area.

In brief, our starting point is the introduction of a protected area as a new governance and management system which brings new regulations, restrictions and opportunities for engagement for local communities. We then proceed by considering how this governance and management system affects local communities by leading to different social impacts (outcomes). However, we proposed that perceptions of these outcomes and the protected area in general are influenced by the social profile of the community where the protected area is or will be established. It is this interaction between the governance and management system, the social outcomes and impacts and the social profile of the community, that determine to a significant extent attitudes, behaviour and engagement of locals (Figure 1). We describe in detail how these interactions may work in the next subsections and propose a practical stage-by-stage approach to explore these issues for practitioners when planning protected areas in Section 4 of the paper.

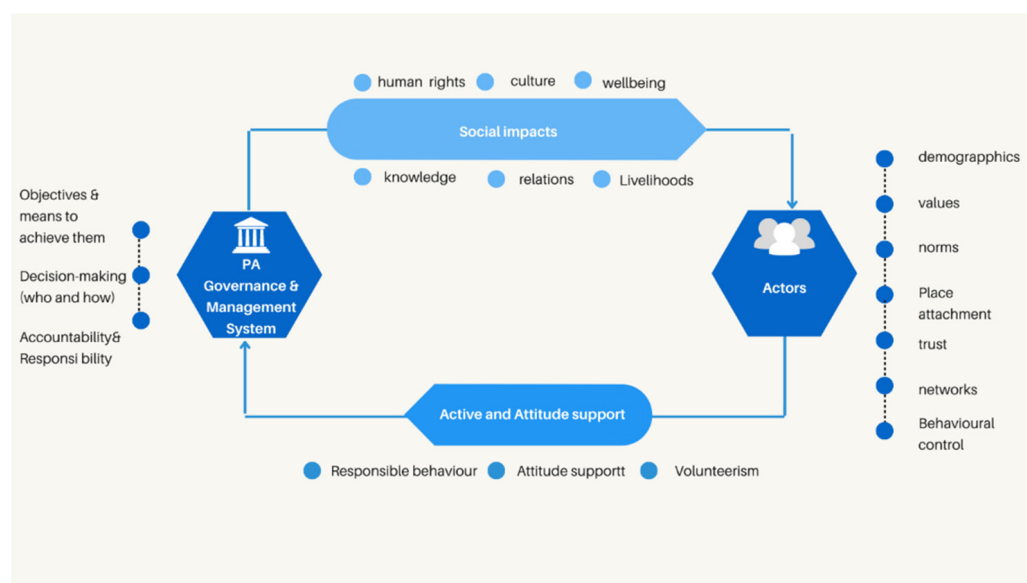


Figure 1. Exploring public support for protected areas.

3.1. The Governance and Management System

A key starting point when designating a new protected area is the decision on what type of governance framework will be introduced [58] along with the key objectives of

the management system. Management refers mainly to the key objectives of the protected area and the means to achieve these objectives whereas governance focuses more on who participates in decision-making processes and how [82]. IUCN [82] identified four governance types for protected areas:

- Type A: governance by government (at various levels);
- Type B: shared governance by diverse rights holders and stakeholders together;
- Type C: governance by private entities (often land owners); and
- Type D: governance by Indigenous peoples and/or local communities (at times referred to as ICCAs or territories of life).

In Europe, there is a large number of protected areas which fall under a number of designations such as the NATURA 2000 network (European level), national parks (national level) and regional parks (regional level). Although the European Union has an important role in providing directions for biodiversity conservation, through for example the Biodiversity Strategy [4], it is the national and regional governments that have the main responsibility for designating protected areas and managing them.

In the majority of cases, protected areas in Europe fall under the Type A governance system (governance by government) with an increasing number of protected areas falling in the second category of shared governance [83,84]. However, the effectiveness of protected areas varies significantly between regions which is strongly linked to political and historical factors. For example, the transition to market governance frameworks in Eastern and Central Europe has been considered unsuccessful in many cases where intense tourist activities and logging were developed [85]. Due to historical reasons, there has also been varied levels of success in engaging the public during protected area designations [10]. The EU has been criticised for not considering issues of social justice in key legislative frameworks such as the Habitats directive, leading to inefficient governance systems [86].

Effective governance and management of protected areas rely both on attitude and active support by local actors including voluntary activities leading to self-organisation initiatives [87] but also to a high level of compliance with new protected area regulations. Thus, a key first step for policy makers when they explore the level of support for a protected area and its influencing factors is to map the characteristics of the governance and management framework focusing on: (a) key objectives; (b) means of achieving these objectives; (c) who is involved in decision making and how; and (d) who is accountable and responsible from the actors involved [83] (Figure 1).

3.2. Outcomes of the Governance and Management System

A second important step for practitioners is to understand the outcomes of the new governance system for local communities and how these are distributed between and within local communities [39]. This is a key step as social impacts are a significant parameter in explaining the level of support for several protected areas [68]. Ostrom [20] underlined the complexity of the occurrence of costs and benefits within the socio-ecological systems literature and protected areas' impacts have been the focus of a growing literature in conservation social science (e.g., [88–92]). Jones et al. [23] reviewed 47 European studies and identified 6 categories of social impacts resulting from the designation of protected areas, revealing the broad outcomes of protected areas for local communities. Key categories identified were: wellbeing [93,94]; human rights and access to natural resources [95,96]; knowledge and education [97,98]; livelihoods [92,99,100]; local culture and values [88,101] and social relations [99,100]. Considering how these impacts are distributed between stakeholders is also important [101,102].

3.3. Factors Interacting with the Governance and Management System and Its Outcomes

In order to fully understand an individual's decision to support or not support a protected area, it is also important to consider the social context within which they make their decision and how their perceptions and attitudes are created within this context. This can be considered as the social profile of the community where the protected area

is established and may include a mosaic of factors as these were mapped in Section 2 of this paper.

There is a large literature that identifies a number of factors that may influence the level of support of a protected area. Perceptions of the social impacts differ between stakeholders mainly due to varying personal, local and contextual factors that existed before the establishment of the protected area [103]. It is these locally based parameters that may significantly differentiate the outcomes of a protected area and the level of support towards it. We present in Table 1 the key factors that interact with the impacts of the governance system and influence the level of support for a protected area based on the categories we identified in Section 2 including also demographic characteristics, such as sex and income. Table 1 presents a list of these parameters along with examples of how they can be operationalised for scientists and practitioners.

Table 1. Pre-existing factors influencing support for a protected area.

Factors Influencing Support and Behaviour towards Protected Areas within Each Actor Group	Example of Indicators
Social norms	<ul style="list-style-type: none"> • Feeling of obligation to follow norms [50] • Expectation that other people comply with regulations of the protected area
Behavioural control	<ul style="list-style-type: none"> • How easy it is to use responsibly the protected area (<i>It is easy for me to use the protected area responsibly</i>) [96]
Values	<ul style="list-style-type: none"> • Importance of values (e.g., <i>It is important to be helpful to others</i>) [104,105]
Place attachment	<ul style="list-style-type: none"> • Level of attachment to the area (e.g., <i>This area is very special to me</i>) [106]
Social trust	<ul style="list-style-type: none"> • Level of trust towards other people in general [107] • Level of trust towards specific groups (family, friends, residents in the same community) [99]
Trust in institutions	<ul style="list-style-type: none"> • Level of trust in management boards of protected areas/central government/local government [99]
Social networks	<ul style="list-style-type: none"> • Level and frequency of participation in formal organisations (e.g., NGOs) [108] • Level and frequency of participation in informal networks (e.g., meeting with friends/relatives) [108] • Level and frequency of participating in decision-making processes for the protected area/in other community matters [108]
Socio-economic attributes	<ul style="list-style-type: none"> • Frequency of visiting the protected area • Purpose of visit • Type of use (e.g., collecting herbs, commercial fishing, logging) • Perceptions of the provision of services from the ecosystem in the past and after the protected area designation • Age, sex, education, geographical location, occupation, income

4. Discussion: Importance and Application of the Proposed Approach for European Protected Areas

Europe has an extensive network of protected landscapes and seascapes [4]. However, the previous EU biodiversity strategy failed to meet the initially set targets [109] with significant improvements needed to increase the strategy's effectiveness [110]. The EU is currently preparing for the next decade after publishing an ambitious Biodiversity Strategy for 2030 [4]. According to this strategy, EU countries are expected to significantly increase the area of land and sea that is under protected status.

The need for high levels of attitude and active support by citizens has been recognised by the EU as being essential for the success of the new strategy [4]. However, no official framework exists to assist in the assessment of public support for protected areas. Limited existing studies focus mainly on the views of specific stakeholders [44,68,111], missing a more holistic approach of the whole socio-ecological system.

The approach proposed in this paper provides a new way of understanding support for protected areas. The framework is founded on two key principles. In order to build effective protected areas, it is important to understand the level of public support across different user groups but also understand how different factors have formulated local perceptions about the protected area. This can be achieved by exploring attitudes towards protected areas at a local level, but most importantly by understanding the unique socio-ecological system in which local attitudes are bounded.

Acknowledging these principles is important considering that the formulation of EU directives is the main approach to developing local and national conservation policies in Europe. Indicative examples include the Birds and Habitat directives that form the basis of the NATURA 2000 network. Although these high-level directives have had a significant impact in improving environmental quality across the EU and beyond (for example, in the wider European Economic Area and countries aiming to join the EU in the future), there are still significant issues that need to be addressed (e.g., [9–16,112–114]).

We proposed a new planning and assessment framework when designating protected areas in Europe that considers the different factors that have been identified in the literature and is divided in four main stages (Figure 2 and Box 1): (a) mapping the main characteristics of the governance and management system of the protected area; (b) conducting a social impact assessment; (c) capturing the social profile of the local community and (d) understanding how the interaction between social impacts, the local social profile and the governance and management system influence the level of support for the protected area.

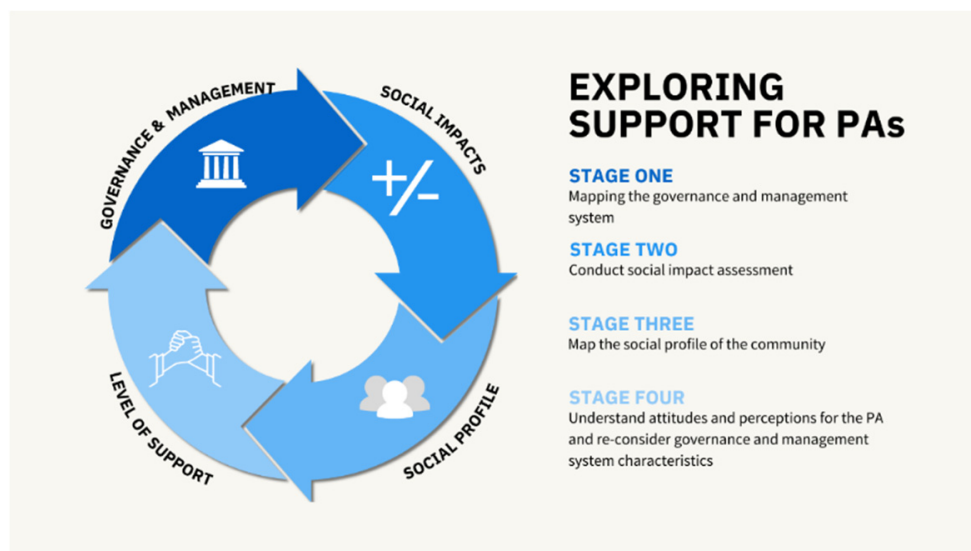


Figure 2. A stage-by-stage approach to explore public support for protected areas.

Box 1. A stage-by-stage approach to explore public support for protected areas.

Stage 1: Map the governance and management system characteristics

In order to explore the level of support for protected areas, a first key step for practitioners is the mapping of the main characteristics of the governance and management system referring to a number of issues including: (a) the key objectives of the protected area (management); (b) how these objectives will be achieved (management); (c) who will be or is involved in decision-making processes (governance); (d) how decisions will be made (governance); (e) who is accountable and (f) who is responsible from the actors involved [83].

Stage 2: Conduct a socio-economic impact assessment

At the second stage, a detailed socio-economic impact assessment is proposed in order to understand both perceptions of locals regarding the protected areas. Jones et al. [23] identified six categories of social impacts that can help in this direction. However, no widely accepted tool for social impact assessment currently exists, apart from some preliminary attempts including the PA-BAT tool [115] and SAPA [116]. The categories identified in Section 3.2 provide a detailed review of the different impacts that need to be included in an in-depth assessment.

Stage 3: Capture local social profile

At the third stage, it is important to capture the local profile of the community where the protected area is designated. This includes a type of a broad social capital assessment capturing local values, trust, networks, knowledge, social norms and socio-economic attributes, all factors that have been identified as important indicators explaining attitudes and behaviours for protected areas [9,38,45,46,58,59,65]. Currently, no tool has been proposed in order to assess the local profile of protected areas communities; however, a number of useful indicators are proposed in Table 1.

Stage 4: Explore how local characteristics influence attitudes and perceptions and identify actions for improvement

At the fourth and final stage, practitioners are able to explore how the local profile may impact perceptions, attitudes and the level of support for the protected area. This combines findings from Stages 2 and 3 in the process and identifying how it may impact the elements identified in Stage 1 and the effectiveness of the protected area. This is a key part of the planning process which is often omitted in existing assessments where social impacts are assessed but are not explained. By exploring a number of factors regarding perceptions and attitudes, practitioners are able to identify pathways that can improve the governance system, such as maximizing benefits for people and designing actions for mitigating negative impacts without relying on economic incentives.

Our approach highlights that each protected area within Europe implies a different socio-ecological system. Even within the same protected area, the values of individuals influence support in different ways. Applying our approach may assist policy makers in three ways: (a) to understand the level of public support for an existing or proposed protected area; (b) to acquire an in-depth understanding of why these levels of support are observed; and (c) to facilitate decision making by identifying weaknesses in the policy and governance system that need to be addressed in order to increase compliance with regulations and more importantly encourage voluntary initiatives that might lead to self-organisation.

The proposed approach is not exhaustive and we recognise that future empirical contributions will assist in its improvement. The framework proposed is focused on the individual while making a connection with the collective context within which individual perceptions are formed and behaviours are developed. Future research and empirical applications across different sites may allow us to establish stronger links with collective parameters, such as collective social capital. Furthermore, longitudinal data is useful for a better understanding of feedback in the socio-ecological system after the initial designation of the protected area, which influences personal values and other factors and subsequently impacts environmental behaviour and the level of support for the protected area. For example, negative perceptions about the impacts (costs) of a protected area (e.g., higher costs for fishers due to longer journeys to continue their livelihoods outside the protected area 's restriction zone) may be reduced if the provision of benefits from the protected area increases. We consider this framework to be a significant starting point that can facilitate the development of predictive scenarios prior to policy decisions about landscape and seascape management being made. By capturing the complexities between the governance

and actor systems, and by creating a link with the outcomes of these systems, scientists and practitioners can reach policy decisions that achieve a better balance between human wellbeing and nature conservation.

5. Conclusions

In this paper, we proposed a new planning and assessment approach for protected areas that aims to improve our understanding of public support for protected areas, taking into consideration the governance and management framework and the actors affected by the designation of the protected area. Our paper brought together theoretical contributions and empirical evidence from different fields and identified several key factors that play a significant role in influencing the level of support of protected areas. Our proposed approach and the accompanying indicators may assist practitioners to use a common framework in the European region and beyond, especially when designating protected areas. Our key point is that the new EU Biodiversity Strategy needs to recognise the locality of protected areas in order to ensure the success of its ambitious targets. Thus, apart from assessing the level of public support of new and existing protected areas, it is also essential to understand the social context that influences the level of support for such policies and to make necessary adjustments to increase public support.

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