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Delineating participation in conservation governance: Insights from the Sierra de Guadarrama National Park (Spain)

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ABSTRACT

The active participation of local stakeholders in governing protected areas is increasingly recognized in biodiversity conservation. While progress has been made in countries to facilitate inclusivity in conservation decision-making, there is limited practical guidance of participatory mechanisms enabling stakeholder engagement. Disentangling formal and informal governance arrangements within protected areas illuminates how stakeholder participation in decision-making is shaped and potentially improved. Here, we provide an analytical framework characterising governance arrangements to examine the formal and informal mechanisms guiding stakeholder participation conservation decision-making in the Sierra de Guadarrama National Park (Spain). We conducted 76 semi-structured interviews and field observations with local stakeholders, and reviewed Park policy documents. Our findings reveal governance arrangements are contingent upon stakeholders' responsibility (shared vs. concentrated) and influence (equal vs. unequal), regardless of the (in)formality of decision making. We found four types of arrangements that characterise governance of Sierra de Guadarrama National Park—cooperative, consultative, informative, and prescriptive—and identified the mutually supportive role formal and informal mechanisms play in shaping participation. We argue stakeholders' responsibility and influence are key analytical axes to delineate participatory mechanisms in order to identify challenges and opportunities for more inclusive conservation. Our study provides analytical guidance that could be adapted and scaled up to other protected areas for understanding participation in conservation decision-making.

1. Introduction

The active participation of stakeholders in governing protected areas (PAs) is widely recognized as a pivotal component of conservation. This underpins the Convention on Biological Diversity (CBD, 1992) and resultant frameworks (e.g., the Post-2020 Global Biodiversity Framework), in addition to regional agreements such as the EU Biodiversity Strategy for 2030 (EU-European Commission, 2020). A large proportion of literature posits that engaging a diversity of actors in decision-making can facilitate stronger and long-term arrangements for biodiversity conservation (Oldekop et al., 2016; Andrade and Rhodes, 2012; Pretty and Smith, 2004). Stakeholder inclusivity is thought to be beneficial for conservation governance by: 1) understanding conservation challenges from different perspectives (Cornell et al., 2013); 2) identifying priorities and practical solutions on the basis of societal concerns, scientific advances, and policy needs (van den Hove, 2000); 3) enhancing information exchange and building capacity to promote well-informed societies and democratic participation in decision-making (Rist et al.,

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2007); and 4) promoting social legitimacy of conservation tools and practice by balancing economic, social, and environmental goals (Richards et al., 2004).

Participatory practice, however, has stirred general debate in terms of biodiversity conservation improvement (Baldauf, 2020; Bulkeley and Mol, 2003). Increasing evidence reinforces the idea that the participation of stakeholders may not necessarily result in beneficial arrangements for conservation governance, due to inherent limitations of participatory approaches (López-Bao et al., 2017; Kochskämper et al., 2016; Newig and Fritsch, 2009; Brody, 2003). Inevitable challenges and biases such as the selection of stakeholder participants and power dynamics within society lead to disabling conditions for democratic participation (e.g., exclusions, restrictions and inequalities) (Matulis and Moyer, 2017; Ruiz-Mallén et al., 2014; Turnhout et al., 2010; Peterson et al., 2005). Such conditions may engender discriminations, disputes, and deadlocked discussions between stakeholders resulting in unintended consequences for conservation governance and biodiversity conservation. In addition, differing personal qualities and socioeconomic context are also factors that can create inequalities in conservation decision-making (Ruiz-Mallén et al., 2013).

Scholars are also engaged in normative debates on how stakeholders' participation in governance *should* be organized to achieve better conservation outcomes whilst dealing with the aforementioned challenges (Matulis and Moyer, 2017; Cuppen, 2012; Ostrom, 2010; Bulkeley and Mol, 2003). Organizational forms determine the mechanisms and processes through which different stakeholders can participate in decision-making within a specific PA, and in turn determines who has a legitimate stake to exert influence and under what conditions they can influence conservation issues (Ruiz-Mallén et al., 2013; Reed, 2008; Richards et al., 2004). This implies that the ways in which participation is organized (e.g., stakeholders' representativeness, responsibility, and influence in decision-making) within PAs create modes of inclusion and exclusion that create more or less productive conservation outcomes (Richards et al., 2004; Rowe and Frewer, 2000; Arnstein, 1969). A growing body of work advocates for multiple democratic principles (e.g., equity, equality, empowerment, transparency and legitimacy) to facilitate modes of inclusion to engage and sustain governance arrangements for conservation (Sullivan et al., 2019; Dawson et al., 2018; Oldekop et al., 2016; Reed, 2008). However, there is limited practical guidance from which the conservation policy-making community can use to enhance participation in this regard (Mease et al., 2018).

The analysis of governance arrangements in PAs may provide evidence on how participation is delineated by conservation authorities and illuminate what measures are suited for inclusive engagement (Borrini-Feyerabend et al., 2013; Armitage et al., 2012). Here, governance arrangements (GAs) are defined as compromises between two or more stakeholders to achieve a specific goal with implications for conservation decision-making (Arnouts et al., 2012). GAs can be shaped through both formal and informal mechanisms (Borrini-Feyerabend et al., 2013; High et al., 2004). Formal mechanisms include organizational forms through which stakeholders interact in an official capacity to establish GAs (Borrini-Feyerabend et al., 2013). For example, in formal co-management committees, selected stakeholders share responsibility and authority to make conservation decisions. While these GAs are challenging and time-intensive, they usually produce interesting results in terms of conservation in countries with shared-governance schemes of PAs, such as Indonesia and Colombia (Borrini-Feyerabend, 2013; Dudley, 2008). Comparatively, formal advisory committees prevail in regions with top-down management models (e.g., Europe and USA), where selected stakeholders are consulted about discrete conservation issues while the legal authorities responsible for managing PAs make the final decisions (Borrini-Feyerabend et al., 2013). Despite advisory boards' contribution to transparency and credibility, the limited empowerment of stakeholders may also generate frustration, undermining stakeholder participation in conservation governance over time (Gaymer et al., 2014). Informal-based mechanisms refer to social norms, personal relationships, and social networks that guide stakeholders' interactions within the invisible system of governance (High et al., 2004). Examples of informal participatory practices are meetings and workgroups with decision-makers that are held outside the formal governance system, which are often characterized by trust and power dynamics.

Our study examines GAs at both formal and informal levels in Sierra de Guadarrama National Park (SGNP), Spain. SGNP is managed by two regional state administrations and a complex stakeholder network. We identify the mechanisms shaping stakeholders' participation in the site and the stakeholders involved, and we characterise four types of GAs according to the levels of stakeholders' responsibility and influence to achieve such arrangements. Our findings provide analytical guidance for understanding participation in conservation decision-making and elucidating challenges and opportunities for more inclusive approaches that can be adapted to other PAs.

2. Methods

2.1. Case study

SGNP spreads through the Central Mountain System of the Iberian Peninsula (34,000 ha) in the Madrid and the Castilla y León regions (Fig. 1). SGNP was established in 2013 to protect the natural capital and ecosystems of the region and to develop use compatible with conservation (BOE, 2013; BOCYL, 2010; BOCM, 2010). SGNP features glacial cirques, alpine lakes and unique granite rock formations that support rare and diverse species.

A key feature of SGNP is its proximity to the metropolitan area of Madrid (over 6.5 M inhabitants) and the mid-sized city of Segovia (around 50,000 inhabitants), which has attracted a large, and growing, number of visitors such that it is the second most visited national park in Spain. While park visitors are mainly interested in sports and recreation, the SGNP also encompasses a variety of local stakeholders engaged in diverse activities such as extensive livestock farming and environmental conservation. The multiple and sometimes competing use creates tensions around how SGNP should be governed (López and Pardo, 2018).

SGNP is part of the Spanish network of National Parks and represents an interesting case study in governance due to its complex boundaries and intersecting governing competences. Two regional state administrations (Madrid and Castilla y León) share the legal authority in conservation decisions (BOE, 2013). In addition to the core National Park, there is an adjacent "Special Area of Protection", overseen by a national state administration and a "Peripheral Area of Protection", comprised of 34 municipalities (28 of which intersect the core National Park) intended as a buffer zone to minimize adverse impacts (Fig. 1). SGNP also includes designated areas managed by other state administrations, such as the River Basin Authority.

In 2013, two formal decision-making boards were created to coordinate the state administrations holding the authority *de jure* in SGNP: the Coordination Board and the Management Board (Table 1), and later, the Advisory Board of SGNP was legally constituted as a consultative body to promote the involvement of society in conservation decision-making (Table 1). In the context of SGNP, these three boards represent the major decision-making arenas embedded in the formal governance system through with stakeholders can participate in developing GAs.

Beyond decision-making boards, there are a variety of mechanisms shaping GAs, such as the public participatory process to develop the management plan for SGNP (i.e., PRUG: the strategic document that set a long-term vision for achieving conservation goals of SGNP) (BOCM, 2020; BOCYL, 2019). Recently, meetings convened by authorities offered stakeholders outside the decision-making boards to express their perspectives of goals and practices related to management and biodiversity conservation within the Park's PRUG. Simultaneously, surveys, interviews, and informal meetings have also collected the expertise of

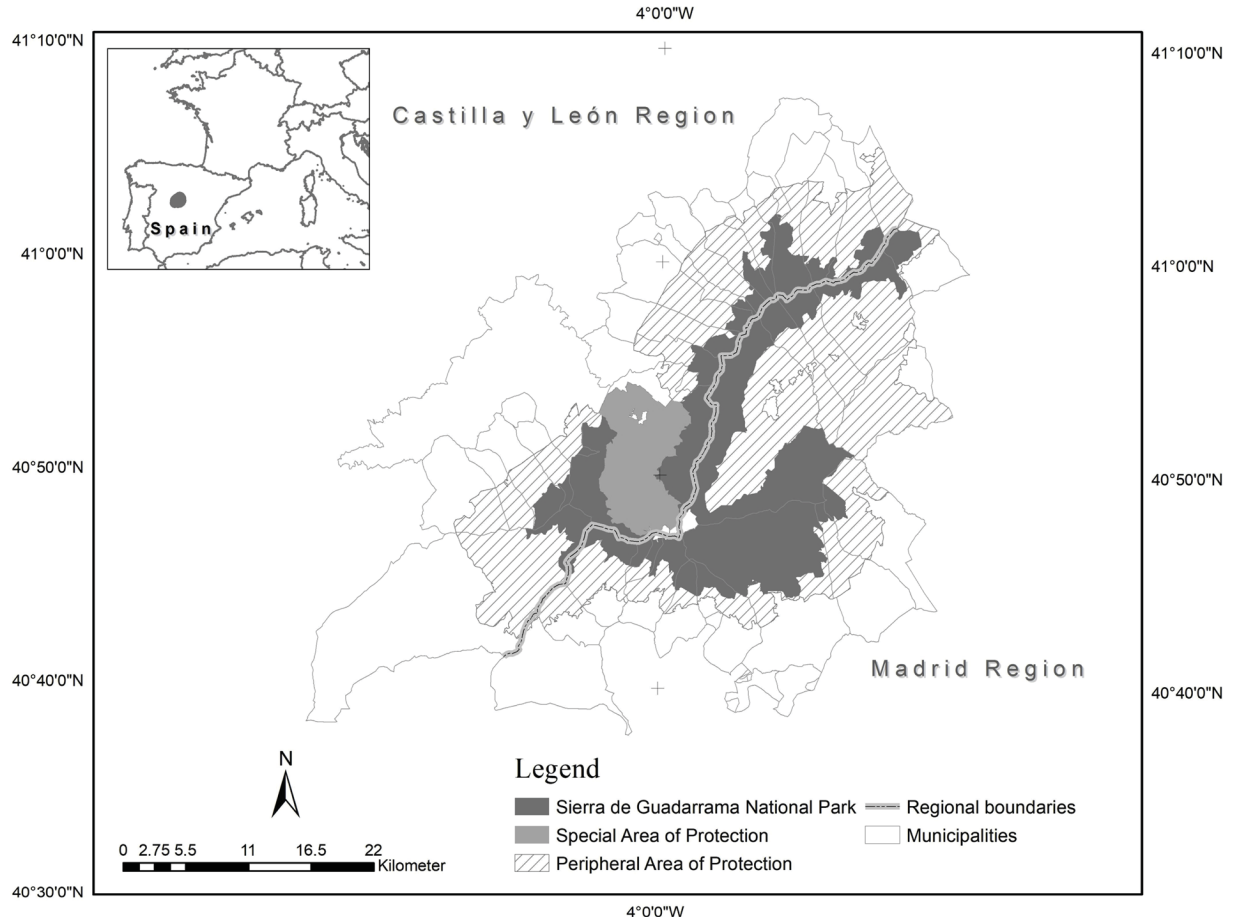

Fig. 1. Sierra de Guadarrama National Park's regional boundaries in the Madrid and the Castilla y León regions, the adjacent "Special Area of Protection", the "Peripheral Area of Protection", and surrounding municipalities.

Table 1
Major formal-based decision-making boards within SGNP through which stakeholders attempt to establish GAs.

Decision-making board	Role	Membership, authority and responsibility
Coordination Board (*Comisión de Coordinación*)	To develop integrated management and conservation of SGNP according to the national guidelines (BOE, 2013)	Two representatives of the two regional state administrations holding the authority in SGNP, and four of the national state administration responsible for establishing national guidelines in Spanish National Parks.
Management Board (*Comisión de Gestión*)	To coordinate conservation decision-making in SGNP (BOCYL, 2014)	Six representatives appointed by each regional state administration holding complete authority, responsibility and accountability for SGNP management decision-making and enforcement.
Advisory Board (*Patronato*)	To promote the involvement of society in the management of SGNP (BOE, 2013; BOCYL, 2014)	Forty-three state actors represented, from the national to the local scales, and sixteen representatives of non-state actors that were appointed by the state administrations holding the authority *de jure* in SGNP.

researchers and experts to elaborate the management plan.

2.2. Analytical framework

Our analytical framework (Fig. 2), adopts Cox's (2014) modified social-ecological systems (SES) framework from Ostrom (2007, 2009). Cox's framework integrates diverse work on common-pool resources to address inherent limitations of the original Ostrom framework (e.g., its applicability to large-scale SESs). The Cox (2014) framework builds upon three main components: 1) Governance System (a set of institutional arrangements such as rules, policies, and governance activities that are used by one or more actor groups to govern an environmental commons; 2) Actor group (a group of actors, i.e., of individuals, organizations or nations, which have developed a set of institutional arrangements in order to interact with); and, 3) Environmental commons (an environmental phenomenon that is associated with important benefits to certain actor groups, and the presence of which is also associated with negative extraction or emission-based externalities). These three main components are linked to each other via the social arena in which actors repeatedly make a set of decisions (Interactions) that affect social or biophysical Outcomes.

We focus on the Governance System, Actor group components and their Interactions to understand the participatory mechanisms shaping GAs in SGNP through a shared responsibility and power-relation approach. For each component, we draw on a set of variables to operationalize GAs proposed by Arnouts et al. (2012) (Fig. 2). In the Governance System component, we address the rules that shape the interactions between stakeholders for decision-making. We distinguish between "formal" and "informal-based mechanisms." Formal

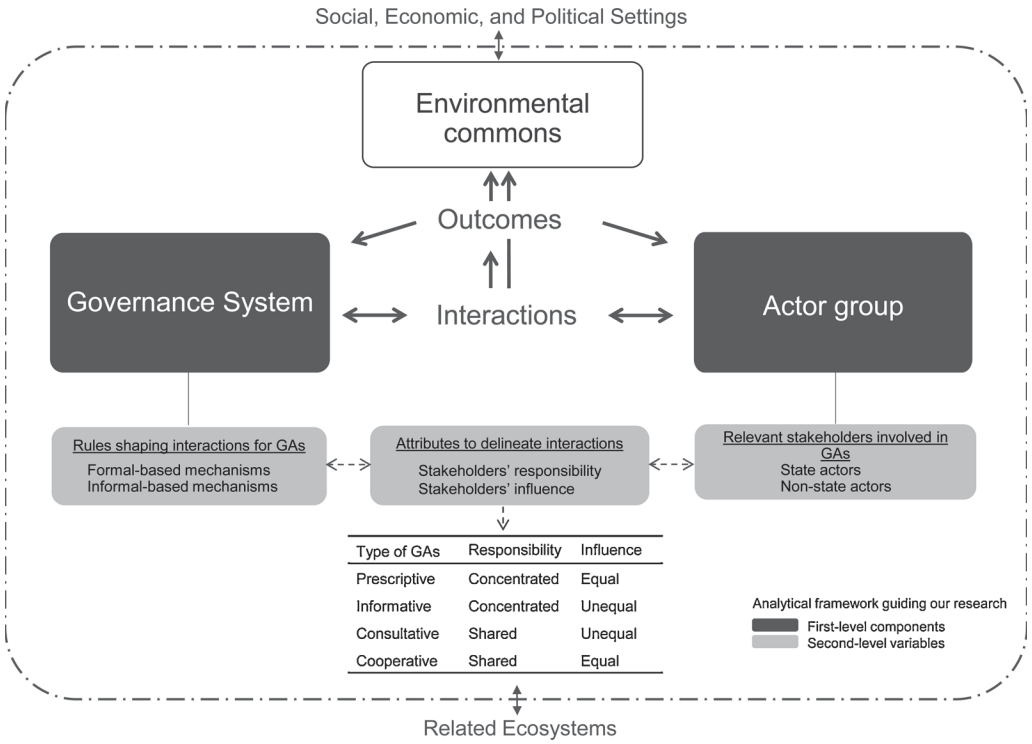

Fig. 2. Analytical framework guiding this research adapted from the Ostrom (2007, 2009) social-ecological systems (SES) framework (Cox, 2014). Dark grey boxes denote main components (Governance System and Actor Group) and arrows indicate associations with Interactions, Outcomes, and Environmental commons components. Light grey boxes highlight how our variables from SGNP are linked to each component and our developed typology of GAs.

mechanisms refer to institutional procedures through which stakeholders interact in an official capacity to establish GAs whereas informal mechanisms relate to unofficial participatory routines, typically based on personal relationships and social networks outside the official governance system (Arnouts et al., 2012; Borrini-Feyerabend et al., 2013). In the Actor group component, we look at "relevant stakeholders" who are defined as actors who affect or are affected by a GA (Freeman, 1984). Given the analytical importance of the participation of non-state actors in government-led PAs (Newig and Fritsch, 2009), such as the SGNP, we make a distinction between state actors (or those representing a state governmental body) and non-state actors. State actors in SGNP include state administrations from municipal to international levels and state-owned enterprises/foundations, while non-state actors refer to universities, education and research centres, non-profit organisations, federations, trade unions, local action groups, private companies, and socially recognized individuals.

To delineate the Interactions between the Governance System and Actor group components, we expand the analytical framework of Arnouts et al. (2012) to focus on "responsibility" and "influence" as attributes of formal and informal-based mechanisms shaping stakeholders' involvement in GAs. Responsibility refers to the division of responsibilities between stakeholders to develop GAs: "concentrated responsibility" is when stakeholders perceive that responsibility is concentrated in the hands of a few actors compared to "shared responsibility" when perceive equally allocated. Influence relates to the distribution of power between stakeholders to achieve a desired GA where "equal influence" is when stakeholders perceive that they and their partners may have a similar capacity to achieve GAs, contrasted to "unequal influence" when they perceive that certain actors have more power than others. In combining these two variables, four "types of GAs" are defined according to the participation of stakeholders: prescriptive (concentrated responsibility, equal influence), informative (concentrated responsibility, unequal influence), consultative (shared responsibility, unequal influence), and cooperative (shared responsibility, equal influence).

2.3. Data collection and analysis

We used semi-structured interviews (Ritchie and Lewis, 2003) with nine key informants during April – May 2019, and reviewed SGNP-related news, digital social networks, and policy documents (e.g., legal norms, participatory processes, planning and management actions) to achieve a preliminary understanding of how stakeholder participation works within the SGNP governance system. We identified a initial list of 75 key stakeholders to be interviewed and designed the interview guide accordingly (Appendix A). Within the interview guide, we included a sociogram to collect data on stakeholders' level of influence and dependence on conservation decision-making in SGNP (Ruiz-Mallén et al., 2013). Interviewed stakeholders were asked to place themselves and other stakeholders on quadrants with two axes representing levels of influence and dependence on conservation decisions. A pilot test of the interview (n = 4) helped ensure questions were relevant to diverse stakeholders.

In addition to the nine interviews to key informants, we conducted the interview with 67 SGNP stakeholders (July, September and October 2019): 63 % in Madrid and 37 % in Castilla y León; 57 % of interviewees were state actors vs. 43 % non-state actors. The initial list of stakeholders was enlarged (n = 87) by using the snowball technique (Bernard, 2005) to include individuals mentioned at least twice by other interviewees. Some interviews (n = 20) could not be conducted because the invitation was declined or it was not possible to reach any representative of the stakeholder group (e.g., hunters' groups and private sector). Informed consent was obtained before each interview.

Interviews were audio-recorded and summarized. We took field notes (Walford, 2009) to complement the qualitative data (Appendix B). Interviews were analyzed through qualitative content analysis (Hsieh and Shannon, 2005) by using the summaries and field notes, consulting audio files when needed to clarify stakeholders' perceptions. We sorted

the data by looking for common patterns and representative perceptions, using predefined codes that emerged from our analytical framework (Newing, 2011), such as "identified GA", "mechanism shaping GA", "stakeholder involved", "stakeholders' responsibility", and "stakeholders' influence." We triangulated data related to "identified GA" with the prior policy review. For each "identified GA" we coded data regarding the nature of the mechanisms behind it (formal vs. informal), the type of stakeholders involved (state actors and/or non-state actors), the perceived responsibility (shared vs. concentrated) and influence (equal vs. unequal). We also triangulated interview data on influence with the data gathered from sociograms. Finally, from coded responses related to responsibility and influence, we organized GAs into 4 groups based on our analytical framework: cooperative, consultative, informative, and prescriptive. Throughout the analytical process, we identified verbatim quotes from the audios to illustrate key themes as well as supporting and conflicting views.

3. Results

3.1. What are the PA governance mechanisms behind the GAs in SGNP, who is engaged and how?

We identified 20 PA governance mechanisms shaping 40[1] GAs in SGNP (Table 2). These mechanisms included both formal procedures (73 %) and informal routines (27 %).

We found most formal GAs came from three bodies: the Management, Coordination, and Advisory Boards (Table 1). Many interviewees perceived board membership was necessary to develop GAs. This feeling was expressed by one of our interviewees: "*We do not have equal opportunities to participate in the decisions because we are not all members of the Advisory Board*" (state actor; #8). However, formal decision-making forms coexisted with informal-based mechanisms to shape GAs that were largely based on long standing personal relationships and close interactions among stakeholders. These informal practices encompassed mainly sectoral/bilateral meetings, discussion groups and personal networks (Table 2), which supported the creation of GAs disregarding whether stakeholders belonged or not to the major decision-making boards mentioned above. An interviewee highlighted the value of such informal mechanisms: "*I participate in the National Park through all means, but above all, through one: friendship. However, I understand that not everyone can do so. I have a personal friendship with decision-makers that has been built up over time, and my involvement [in governance] is almost spontaneous […]. Many times, I have asked decision-makers to talk to persons who have problems [with the National Park], and they have done it*" (non-state actor; #35).

We identified a total of 87 stakeholders (61 state and 31 non-state actors) who directly or indirectly participated in these governance mechanisms (Table 3). Approximately half (56 %) were involved at least in one formal board, where the regional administrations (authority *de jure* of the site) and the state administration (Spanish National Parks) were engaged in 100 % and 55 % of the GAs, respectively. Non-state actors, such as non-profit organizations focused on environmental advocacy and federations for outdoor sports and activities, played a secondary role in shaping GAs (45 % of the GAs).

In GA development, 52 % involved at least two stakeholders (same or different group) that shared responsibility. In the remaining GAs (48 %), responsibility was largely concentrated in a single stakeholder group; the state administrations (Table 2). In most cases, we found equal influence among involved stakeholders in GAs (83 %). Power equity in GA development was a dominant feature in state actors (67 % of cases), while in the remaining GAs (33 %) power was shared between state and non-state actors (Table 2).

3.2. Types of GAs within conservation decision-making in SGNP

Stakeholders' perceived level of responsibility (shared or concentrated) and influence (equal or unequal) in establishing GAs revealed that formal-based mechanisms were instrumental in all governance forms within our framework: cooperative, prescriptive, consultative and informative. GAs with informal mechanisms were mainly cooperative GAs (Fig. 3).

3.2.1. Cooperative GAs

GAs built upon a cooperative basis (shared responsibility, equal influence) were most common (43 % total). Overall, cooperative GAs were understood by the interviewees as arrangements that facilitated a culture of shared responsibility and equal influence. While most of the formal cooperative GAs (44 %) were driven by state actors, informal GAs (56 %) were promoted by both state and non-state actors. Examples of formal cooperative GAs included public agreements between state administrations regarding surveillance activities, and collaborative management agreements. An interviewee described a formal cooperative GA as follows: "*We have collaborative agreements signed with the National Park authorities since years through which we support each other, for example, with material, equipment and facilities*" (state actor; #49). Regarding the cooperative GAs built upon informal-based mechanisms, we found that some arrangements emerged from conflict/misconception resolutions between the state administrations and non-state actors. One of the interviewees explained how informal cooperative GAs may be shaped: *"Conflicts often can be better addressed through speaking and explaining, before using the administrative procedure or sanctions. […]. Mechanisms to generate understanding often avoid them [conflicts]. We usually hold face-to-face meetings to exchange information and our points of view with the involved stakeholders; sitting down together to understand each other and creating empathy between us"* (state actor; #48). Simultaneously, some informal practices shaping GAs, such as the creation of sectoral expert workgroups for technical guidance in regulating SGNP activities, appeared to reinforce social exclusion in conservation decision-making thereby jeopardizing the trust between stakeholders: "*There were workgroups in which only certain institutions were invited to participate [to address specific management issues] therefore the participation was very restricted*" (non-state actor; #17).

3.2.2. Prescriptive GAs

Prescriptive GAs (concentrated responsibility, equal influence) were shaped exclusively by formal-based mechanisms (40 % total). These GAs were usually perceived by interviewees as shaped by state administrations, at both national and regional levels. Prescriptive GAs were characterised by strong state administration influence in conservation decision making due to their legal competence in the governance system. Examples of formal prescriptive GAs included the Pronouncement of SGNP (BOE, 2013) and the creation of its Coordination Board. Many interviewees highlighted the complexity of a prescriptive GA wherein two regional state administrations with the same level of authority have to coordinate conservation: "*The laws establish the legal competences of each one […]. The complexity of the National Park emerges from the necessity to have it managed by two different entities, and taking into account third ones [*e.g.*, administrations that regulated the adjacent "Special Area of Protection]*" (state actor; #16).

3.2.3. Consultative GAs

Consultative GAs (shared responsibility, unequal influence) were derived primarily through formal mechanisms (10 % total). Despite shared responsibility, influence was perceived as unequal by most of interviewees because final decisions were determined by state administrations. The most representative examples of formal-based mechanisms built upon a consultative basis were the Advisory Board and the

[1] Our research did not aim to inventory all conservation arrangements that existed in SGNP; rather to identify the wide variety of potential GAs. This figure (40) should not be interpreted as an exhaustive inventory of all GAs in the site.

Table 2
PA governance mechanisms shaping GAs in SGNP. Mechanisms are shown in accordance with identified GA, nature of the mechanisms, group of stakeholders, division of stakeholders' responsibilities, and stakeholder influence. [[a]Nature of mechanism that shape GAs: (F) Formal mechanism; (I) Informal mechanism / [b]Group of stakeholders involved: (S) State actors; (NS) Non-state actors)].

Governance mechanism shaping GA	Identified GA in SGNP	Nature of mechanism shaping GA[a]	Group of stakeholders involved[b]	Stakeholders' responsibility in developing GA	Influence of the involved stakeholders in GA
1. Political decisions	1a. Political statement to declare SGNP	F	S	Concentrated	Equal
2. International, European and National legislation	2a. Pronouncement of SGNP	F	S	Concentrated	Equal
	2b. Declaration of the socio-political boundaries of SGNP	F	S	Concentrated	Equal
3. Treaties, protocols and memoranda of understanding	3a. Protocol on cross-border cooperation between state administrations	F	S	Shared	Equal
4. Public agreements between state administrations	4a. Declaration of areas with singular status for regulating uses and resources	F	S	Concentrated	Equal
	4b. Mutual support agreement for monitoring and sanctioning	F	S	Shared	Equal
	4c. Economic agreements to support state administrations	F	S	Shared	Equal
	4d. Agreements to promote research activities	F	S, NS	Shared	Equal
	4e. Agreements to promote outreach activities	F	S	Shared	Equal
5. Agreements with private landowners	5a. Declaration of territorial enclaves in private lands	F	S	Concentrated	Equal
6. Coordination Board	6a. Multiple agreements reflected on minutes from the meetings of the Coordination Board	F	S	Shared	Equal
7. Management Board	7a. Multiple agreements reflected on minutes from the meetings of the Management Board	F	S	Shared	Equal
8. Advisory Board	8a. Multiple agreements reflected on minutes from the meetings of the Advisory Board	F	S, NS	Shared	Unequal
9. Public participation processes	9a. The natural resources ordination plans	F	S, NS	Shared	Unequal
	9b. The Plans for use and management	F	S, NS	Shared	Unequal
10. Public contracts to support the management	10a. Management entrustment with state-own enterprises/foundations for technical assistance to day-to-day management	F	S	Concentrated	Equal
	10b. Management entrustment with public/private companies for managing visitors' centres and training activities programs	F	S	Concentrated	Equal
11. Grant award procedures	11a. Allocation of subsidies to develop conservation initiatives	F	S	Concentrated	Equal
12. Public concessions to implement activities	12a. Development of pasture use plans	F	S	Concentrated	Equal
	12b. Development of forest management plans	F	S	Concentrated	Equal
	12c. Concession for wood exploitation	F	S	Concentrated	Equal
	12d. Concession for extensive pasture farming	F	S	Concentrated	Equal
	12e. Concession for traditional firewood practices	F	S	Concentrated	Equal
	12f. Concession to implement and develop activities (e.g., mountains races and ski activities)	F	S	Concentrated	Equal
13. Legal and media communications	13a. Decisions adopted from legal allegations into the management plans by civil society entities/ companies/individuals	F	S, NS	Concentrated	Unequal
	13b. Decisions regarding management issues going through inputs by social media and digital channels to get stakeholders' response	F	S, NS	Concentrated	Unequal
14. Authorizations and requirements to develop activities	14a. Administrative concessions to develop temporal activities	F	S	Concentrated	Equal
	14b. Requirements of professional credentials to work	F	S	Concentrated	Equal
15. Surveys to collect the public's opinion	15a. Adoption of management decisions based on the level of social support	I	S, NS	Concentrated	Unequal
16. Sectoral/Expert workgroups	16a. Preliminary proposal about the desired boundaries	I	S, NS	Shared	Equal
	16b. Technical guidance to regulate specific activities	I	S, NS	Shared	Equal
17. Sectoral/bilateral meetings	17a. Common positions to support the declaration of SGNP	I	S, NS	Shared	Equal
	17b. Arrangements emerged from the resolution of conflicts between stakeholders	I	S, NS	Shared	Equal
18. Discussion groups through apps and social media	18a. Specific conservation decisions to address unplanned management issues	I	S, NS	Shared	Equal
	18b. Alignment of interests concerning management issues	I	S, NS	Shared	Equal
19. Oral agreements	19a. Verbal consent to develop activities	I	S, NS	Shared	Equal
	19b. Oral agreements to support conservation initiatives (e.g., programs for voluntary work or reforestation activities)	I	S, NS	Shared	Equal

(*continued on next page*)

Table 2 (*continued*)

Governance mechanism shaping GA	Identified GA in SGNP	Nature of mechanism shaping GA[a]	Group of stakeholders involved[b]	Stakeholders' responsibility in developing GA	Influence of the involved stakeholders in GA
20. Personal networks	20a. Collaborative agreements to conduct dissemination activities through experts' seminars, blogs, photographic exhibitions and film events, etc.	F	S, NS	Shared	Equal
	20b. Outreach activities through unofficial collaborations supported by trust relationships	I	S, NS	Shared	Equal
	20c. Specific management decisions derived from private consultancy to experienced and reliable people	I	S, NS	Shared	Unequal

Table 3
Stakeholder classification by stakeholder group, typology, and activity sector. Each typology shows corresponding number of stakeholders.

Stakeholder groups	Typology of stakeholders		No.	Activity sectors[a]
State actors	State administrations	International level	2	General administration, natural resources management, infrastructure, vigilance and control, defence, education and outreaching,
		National level	7	
		Regional level	14	
		Supra-municipal	2	
		Municipal	28	
	State-own enterprises/ foundations		3	
Non-state actors	Non-profit organisations		16	Environmental advocacy, education and research outdoor activities and sports, agriculture and livestock, rural development, cultural heritage, tourism, and forest, and private landowners, environmental conservation
	Universities and education and research centres		5	
	Federations		2	
	Trade Unions		2	
	Local Action Groups		2	
	Private companies		2	
	Socially recognized individuals		2	
Total			87	

[a] Included is the diversity of all activity sectors concerning the identified stakeholders within each group.

public participatory process to develop the management plan for SGNP (i.e., PRUG) (BOCM, 2020; BOCYL, 2019). Interviewees tended to regard consultative governance as forms that did not promote "true" participation in two main ways. First, formal mechanisms shaping consultative GAs, such as the Advisory Board, had predefined structures favouring the inclusion of representatives from well-established groups (e.g., local state administrations, environmental NGOs and outdoor sports federations), to the detriment of marginal sectors like the educational, cultural and local communities in general (BOCM, 2014; BOCYL, 2014). An interviewee expressed this perception as follows: "*[The Advisory Board] has an unbalanced representation. There are many representatives of public administrations, but few of the civil society*" (non-state actor; #12). Second, stakeholder members in these GAs did not have a formalised possibility to influence implementation: "*The Advisory Board is not operational [in terms of participation]; it is as a political space. […]. If stakeholders cannot exert influence, then there is no participation*" (state actor; #64). Consultative GAs also had informal routines through which experienced and reliable people were consulted by state administrations about certain conservation decisions. As with formal consultative GAs, informal consultative GAs were perceived as unequal influence.

3.2.4. Informative GAs

Informative GAs (concentrated responsibility, unequal influence) were largely established through formal mechanisms, with only one by informal routines (7% together). Both types were commonly perceived as concentrating decisions in the hands of specific stakeholders, usually the state administrations, while leaving little space for interaction with other stakeholders to influence GAs development. Examples of formal informative GAs were those decisions adopted based on allegations by stakeholders to request modifications to SGNP management plans. Such informative character was highlighted by one of the interviewees: "*I have submitted many allegations and some of them, but not all have been incorporated by the decision-makers into the management plan. […]. I do not know the criteria considered by them to include (or not) each one*" (state actor; #9). The informal informative GA was the collection of public opinion and support regarding management issues through surveys, based on which the state administrations of the SGNP aligned conservation decisions.

4. Discussion and conclusion

4.1. The mutually supportive role of formal and informal mechanisms shaping GAs

Our findings show that conservation arrangements in SGNP developed through formal-based mechanisms are usually entwined with informal practices built upon social norms and personal relationships. In line with previous studies, this underpins the importance of formal and informal-based mechanisms to understand how participation is actually shaped within PA governance (Borrini-Feyerabend et al., 2013; Armitage et al., 2012; High et al., 2004). Specifically, our empirical study emphasizes the distinct ways in which stakeholders are, and can be, involved in conservation decision-making. The fact that most GAs are perceived to be prescriptive may reflect the statutory responsibilities of the two regional state administrations that hold authority *de jure* to make certain decisions (e.g., development of forest management plans). However, under the Spain's legal framework of National Parks' management, SGNP formal authorities are required to set up participatory mechanisms that integrate sectors and groups in management activities (BOE, 2013), providing the governance system with a variety of mechanisms through which other stakeholders can participate. This is also in line with our findings that show formal mechanisms often result in cooperative arrangements that incorporate regional state administrations and other state actors (e.g., state-owned enterprises and local state administrations). However, these common institutional forms are perceived to fail in developing cooperative GAs with *non-state* actors. Existing hierarchies within formal governance structures might deter state administrations from establishing more arrangements for conservation with societal actors and sectors (Teisman and Klijn, 2002), who are also increasingly called to be involved in conservation by European policies (e.g., EU-European Commission, 2020).

Moreover, we found that cooperative GAs between SGNP regional state administrations and non-state actors are frequently shaped through informal practices. Such informal mechanisms have a *de facto* role in participatory governance since most of the conservation authorities frequently perceive them as means to generate proximity and understanding between stakeholders. Whereas these informal practices lead to certain beneficial agreements for conservation (e.g., outreach activities

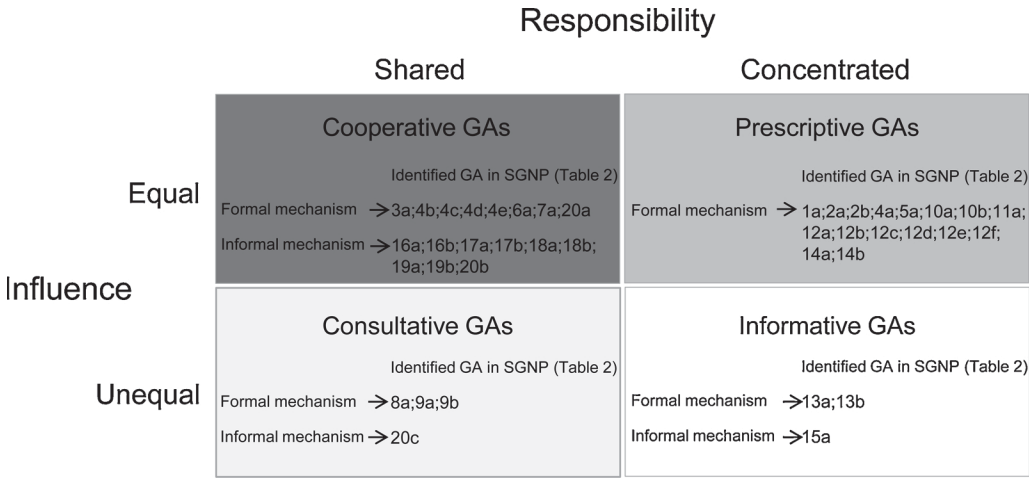

Fig. 3. Classification of the identified GAs in SGNP by typologies of GA (cooperative, prescriptive, consultative, and informative) according to degree of stakeholder responsibility and influence. See Table 2 for corresponding formal and informal mechanisms shaping the identified GAs in SGNP.

and programs for voluntary work), we also found that these are usually carried out through sectoral or bilateral interactions that sometimes generate feelings of exclusion and jeopardize trust between other stakeholders. This may limit participation and lead to unintended consequences for conservation governance (López-Bao et al., 2017; Innes and Booher, 2004). Our results follow previous studies reporting the importance of informal governance mechanisms to understand potential trade-offs because they can lead to both positive and negative outcomes for conservation governance (Armitage et al., 2012; High et al., 2004). Future research should clarify the effects of informal decision-making routines in conservation governance and whether formalising certain informal-based mechanisms that have proven to be effective in establishing strong GAs is desirable or not.

4.2. *Challenges and opportunities of participatory approaches for more inclusive conservation*

Our findings on the types of GAs according to the stakeholders' perceived level of responsibility and influence provide evidence related to equity conditions and empowerment offered by participatory approaches in developing arrangements. Equity and empowerment are key features shaping stakeholders' engagement in conservation governance under the assumption that conditions of shared responsibility and equal power can reinforce the potential benefit of participation in terms of the expected consequences for conservation (Reed, 2008; Richards et al., 2004). By focusing on responsibility and influence, we can delineate participatory mechanisms while pointing to challenges and opportunities for more inclusive governance. For example, in the case of the Advisory Board, which is in theory a space for facilitating stakeholder engagement across sectors that lead to consultative GAs, our analysis highlighted some limitations. This consultative board relies upon quotas of 'key' stakeholders predetermined by state authorities that do not facilitate social inclusion of minority groups or equitable representation of different stakeholders. Most members perceive that their voices can be heard and participate in the dialogue to develop GAs. However, they also perceive they have little influence in conservation arrangements. We argue that the Advisory Board cannot be considered fully participatory in practice because of the inequalities among stakeholders and limited empowerment for some. Worldwide, these types of consultative approaches in PA governance do not fully enable stakeholders to participate in conservation decision-making (Davis, 2018; López-Bao et al., 2017; Reed, 2008; Andrade and Rhodes, 2012). This begs the question of whether the official participatory boards in Spanish National Parks are truly facilitating stakeholder engagement in conservation.

Identifying limitations for participation is the first step to address them (Richards et al., 2004), but our analysis might also contribute to enabling conditions for deeper stakeholder engagement in SGNP. The exploration of informal cooperative GAs which underpins conditions of shared responsibility and equal ability we found to create an atmosphere of dialogue and shared understanding among stakeholders, despite differing interests. A way to move forward in inclusive and sustained engagement in conservation—a goal of SGNP—might be the creation of social spaces where existing responsibility and power relations are transformed to shape GAs. Factors that reshape governance arrangements to be more inclusive include recognizing the diversity of stakeholders' values and institutions, identifying motivations for stakeholder engagement, creating long-term social learning processes based on reflexivity and collective deliberation, increasing the intensity of stakeholders involvement, fostering ownership in process and place, dealing with pluralism and dissent, ensuring transparency, and guaranteeing resource availability (Van der Molen, 2018; Sterling et al., 2017; Blondet et al., 2017; Dedeurwaerdere et al., 2016; Ruiz-Mallén et al., 2014; Cuppen, 2012; Reed, 2008; Richards et al., 2004). Identifying and addressing the integration of these enabling factors into the structure of governance in PAs is foundational for more inclusive conservation.

4.3. *Transferring and upscaling enhanced governance mechanisms to foster social engagement in conservation*

There is an urgent need for the policy community to implement mechanisms that foster social engagement to achieve global conservation targets (UNEP-CBD, 2020). The Post-2020 Biodiversity Framework under the CBD emphasizes the need to create enabling conditions for equitable participation and rights, and unleash values of responsibility to effect new social norms for sustainability (Action Targets 19, 20). Addressing this policy-relevant gap is critical to undertake action-oriented research to inform how conservation governance systems can be enhanced through social engagement (Mastrángelo et al., 2019). In this line, our research has expanded upon the analytical framework proposed by Arnouts et al. (2012) to examine GAs in terms of stakeholders' responsibility and influence in conservation governance. We use the concept of cooperative, prescriptive, consultative, and informative GAs to disentangle mechanisms through which arrangements are actually made, the stakeholders involved, and their types of interactions. The analytical framework we propose has demonstrated potential to delineate participation in conservation governance as well as elucidate opportunities to enhance inclusivity in decision-making mechanisms. This framework can be a powerful tool to support decision-makers in better understanding stakeholders' participation in

conservation governance and monitor participatory practices in order to promote policy changes or management interventions. However, we recognize a potential limitation of the study associated with the under-representation of some stakeholder groups, such as hunters' and private sector, which means that not all diversity of opinions of stakeholders are reflected in our study. It is also important to note that our research did not identify all GAs or participatory mechanisms that exist, but instead captured the key variety of GAs which provided the empirical evidence for a comprehensive analysis of SGNP. As exploratory research, neither did it asses GAs in terms of their effectiveness for conservation outcomes. From this practical perspective, the theoretical basis of our framework could complement other analytical approaches focused on distinguishing typologies and mechanisms of participation previously established by diverse authors (e.g., Rowe and Frewer, 2000; Arnstein, 1969).

While this study provides insights arising from the particular case of SGNP, our findings provide an orientation to guide future research on participatory governance in other PAs and furthers comparative analyses in inclusivity in conservation decision-making approaches. By highlighting the most participatory GAs in SGNP and the underlying mechanisms therein, we provide a framework that would allow the upscaling of policy recommendations to achieve more inclusive approaches to biodiversity conservation in PAs.

CRediT authorship contribution statement

M.D. López-Rodríguez: Conceptualization, Methodology, Formal analysis, Investigation, Writing - original draft, Writing - review & editing, Visualization. **I. Ruiz-Mallén:** Conceptualization, Methodology, Writing - original draft, Writing - review & editing, Supervision, Project administration, Funding acquisition. **E. Oteros-Rozas:** Conceptualization, Methodology, Writing - original draft, Writing - review & editing, Supervision, Funding acquisition. **H. March:** Conceptualization, Methodology, Writing - original draft, Writing - review & editing, Supervision. **R. Keller:** Writing - review & editing. **V.B. Lo:** Writing - review & editing, Visualization. **M.A. Cebrián-Piqueras:** Writing - review & editing, Visualization. **R. Andrade:** Writing - review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Interview guide

1. Stakeholders activities in SGNP

1.1. Could you explain how your entity uses SGNP?

1.2. What benefit(s) does your entity receive from SGNP?

2. Effectiveness of the governance model

2.1 How would you define the management model developed by the state administrations holding the authority in SGNP?; Do you consider that the current management model contributes to achieving the conservation objectives of SGNP?; What issues do you value positively of this model? And negatively?; Could you tell us the position of your entity regarding the management of SGNP?

2.2. Do you think that conservation decisions implemented in SGNP benefit some stakeholders more than others? If so, which of them is the most benefited by such decisions, and which of them is the most harmed?

2.3. How is SGNP affecting the local population?; Could you explain why?; Do you believe that the conservation decisions implemented in SGNP can affect some areas of the protected area more than others?.

3. Decision-making processes and participatory mechanisms

3.1. Has your entity participated or is participating in any way in the planning/management of SGNP? How?; Could you tell us why your entity participates/d this way?

3.2. If your entity is a member of the Advisory Board of SGNP, could you tell us how long you have been participating in this board?; what is your central role and responsibility there?; what decisions do you have to make regularly?

3.3. In general, are you satisfied with the results of participation in SNGP?; Could you tell us why?; Do you think that your opinions are taken into account by the state administrations holding the authority in SGNP? Are there any de-briefing of the decisions in SGNP for your entity?

3.4. Do the state administrations holding the authority in SGNP share information related to management with stakeholders?; Do you know by what means, mechanisms, or procedures the authorities do so?; In general, do you consider the authorities transparent?

3.5. Do you think that all stakeholders are equally able to participate in and give their opinion on the management of SGNP?; Why?; Who is more likely to participate/give their opinions?

3.7. Do you know if there are any formal mechanisms used to raise issues related to the management of SGNP? If so, what do you think of their effectiveness?

4. Perception of stakeholders' influence in decision-making

4.1. Stakeholder identification

In the following open list of stakeholders, you can find entities that carry out some activity in SGNP; please see the list.

- Could you identify the stakeholders that you know?
- Would you add an actor who is not represented on the list, and you think should be?

4.2. Influence/Dependence

In the following Sociogram, a diagram classifies stakeholders according to their ability to mobilize resources and exert influence on the management decisions in SGNP (influence).

- Can you please identify those stakeholders that have the most ability to influence?
- Can you tell us what type of resources that these stakeholders have/may mobilize to influence on decision-making; and how does it use/mobilize them to exert that influence?
- And now, can you identify those that have less ability to influence?
- Can you tell us some of the barriers that can inhibit the influence of these stakeholders?

In the other axis of the diagram, you can see an axis to evaluate the degree of dependence of these stakeholders on the management of SGNP (dependence).

- Using the marker, could you place the stakeholders mentioned on the axis of dependency?; Could you explain why you have placed them in that position?

Considering your entity:

- Could you identify your entity in the axes of influence and dependence?
- Could you explain to us why you have placed it in this position?
- If you consider that your entity has influence, can you tell us how it uses/mobilizes its resources to exert that influence?

Appendix B. Template for collecting field notes

1. Interviewer feeling about the result of the interview
- General position on SGNP.
- Stakes in SGNP.
- Position for/against state administrations managing SGNP.
- Involvement in the management of SGNP and mechanism(s) of participation.
- Predisposition to be involved (passively or actively) in the management of SGNP.

2. Was the participant comfortable during the interview? Did they seem to express themselves freely?

3. Did the participant ever feel self-conscious or uncomfortable about any topic?

4. Was there any contradiction in what they said throughout the interview about the relationship with other stakeholders of SGNP?

5. Did they criticize any institution/collective/individual of SGNP/ praised the work of any institution/collective/individual of SGNP?

6. Were there any incidents during the interview?

7. Did they mention any event or information relevant to the study? And did they voice their opinion on the usefulness of the investigations we are doing?

8. Other observations made during the day of this interview
- Informal conversations in which the topic of SGNP has come up.
- Visits to SGNP facilities and highlights, including talks with technical staff.

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