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RESEARCH ARTICLE

Biodiversity, multi-level governance, and policy implementation in Europe: a comparative analysis at the subnational level

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Abstract

International efforts to protect biodiversity date back to the 1970s. The effectiveness of Multilateral Environmental Agreements and regional legal instruments has been influenced by national implementation. In this process, subnational governance plays a crucial role. Although policy implementation has been extensively investigated, its subnational dimension has been somewhat neglected, particularly in peripheral areas such as the Outermost Regions of Europe. These remote territories are critical areas in the global fight against biodiversity loss since their ecosystems' richness makes them biodiversity *hotspots*. The article applies the knowledge cumulated in policy research to the implementation of biodiversity policy in two of these territories – Reunion Island (France) and the Canary Islands (Spain) – and analyzes policy implementation in the context of multi-level governance. The article questions whether and to what extent decentralization benefits biodiversity policies and highlights salient trade-offs: local empowerment versus fragmentation of competences; responsiveness versus subnational discretion; and accountability versus policy capture.

Keywords: decentralization; environment; France; Outermost Regions; Spain

Introduction

Current environmental degradation encompasses multiple crises: pollution, plastics, overfishing, natural resources depletion, biodiversity loss, and climate change. Many of these crises are strictly intertwined. For instance, the joint workshop organized in 2021 by the Intergovernmental Panel on Climate Change and the Intergovernmental Platform on Biodiversity and Ecosystem Services has stressed the strong links between biodiversity protection and climate change mitigation and adaptation (Pörtner et al. 2021). Other studies (e.g., Ojija and

Nicholaus 2023), international projects (e.g., BlueGreen Governance[1]), and international organizations (e.g., Organisation for Economic Co-operation and Development (OECD) – Climate, Biodiversity and Water Division of the Environment Directorate) analyze even more complex interactions such as those between biodiversity, climate, and water that affect both the north and south of the planet.

In light of these environmental interrelations, biodiversity loss emerges, then, as one of the most important environmental challenges in contemporary society (Pörtner et al. 2021). Biological diversity is declining globally due to human activities, despite the efforts in terms of public policy put in place to address this problem (IUCN 2018). Efforts for biodiversity conservation date back to the 1970s (Arjjumend et al. 2016). Since then, numerous Multilateral Environmental Agreements (MEAs) have been adopted internationally to protect biodiversity (Table 1). Despite such international effort, biodiversity has deteriorated worldwide (Phang et al. 2020; Vaughn 2010). In Europe, the Directives issued by the European Union (EU) have not been able to halt biodiversity loss (EEA 2015; Rouillard et al. 2016). The effectiveness of international and EU instruments for biodiversity protection depends on their implementation at the national level (Smallwood et al. 2022). In this process of domestic implementation, subnational governance plays a crucial role (Walter 2017).

The importance of the subnational level of governance for the protection of biodiversity has become unquestionable in the last few decades. In 2010, the Conference of the Parties of the Convention on Biological Diversity (CBD) endorsed "The Plan of Action on Sub-national Governments, Cities and Other Local Authorities for Biodiversity" and formally acknowledged the importance of the local level in the implementation of the CBD (Puppim de Oliveira et al. 2011).

Policy implementation has been extensively investigated by academic research since the 1970s (Hill and Hupe 2009). However, the subnational dimension of policy implementation has been less studied and more efforts are needed to understand how the subnational level can develop, ease, or hinder governance mechanisms for the protection of biodiversity. This is particularly true for peripheral areas such as the Outermost Regions (ORs) of Europe that have often been neglected by scholarly literature. These remote territories are critical areas in the global fight against biodiversity loss since their ecosystems' richness makes them biodiversity *hotspots* with more than 70% of Europe's biodiversity (Benzaken and Renard 2011).

The article aims at filling these gaps in research with more knowledge on policy implementation at the subnational level of governance in very remote areas of Europe. In order to achieve this aim, the article applies the knowledge cumulated in policy research to the implementation of biodiversity policy in two of these territories, namely Reunion Island (France) and the Canary Islands (Spain). The article analyzes implementation by putting it in the context of multi-level governance (MLG): it questions whether and to what extent decentralization benefits biodiversity policies and the environmental performance of a state. While the findings are the result of field research in two specific cases, the discussion

[1]The project BlueGreen Governance (2024–2027) is co-funded by the European Union under the Horizon Europe Programme (Project number 101086091) and by UK Research and Innovation (UKRI) under the UK government's Horizon Europe funding guarantee (Project number 10108603).

Table 1. Key international and EU instruments for biodiversity protection

Multilateral Environmental Agreements	EU Directives and Strategies
Convention on Biological Diversity (1992)	Birds Directive (1979, 2009)
Aichi Targets (2011)	Habitats Directive (1992)
Global Biodiversity Framework (2022)	Water Framework Directive (2000)
	Marine Strategy Framework Directive (2008)
	Marine Spatial Planning Directive (2014)
	EU Biodiversity Strategy (2011, 2020)

highlights dynamics of implementation in MLG that can be of use to the broader understanding of implementation hindrances, and policy failure and success not only in the domain of biodiversity but in the wider domain of environmental policy and governance.

After explaining the theoretical framework that builds on policy implementation and MLG ("Policy implementation") and the methodological choices ("Materials and methods"), the article analyzes the implementation process of biodiversity policy in Reunion Island (France) and the Canary Islands (Spain) ("Biodiversity policy in France and Spain"). Then, it discusses the two cases *comparatively* ("Implementation hindrances: regional cases compared") in order to draw conclusions and elaborate policy recommendations ("Conclusions") that may be of use in other environmental sub-fields and geographical areas.

Policy implementation

Understood as the process of execution that follows the adoption of a new law, policy implementation has been extensively investigated by scholars from the academic field of Public Policy and Administration (Howlett and Ramesh 2003). Various analytical frameworks have been developed to study and understand this phase of policy-making. However, theoretical efforts have not resulted in a general theory of policy implementation (Winter 2006). Various sets of explanatory independent variables have, instead, been isolated by different authors according to their angle of research on the topic.

From a top-down perspective, policy implementation can be represented as a hierarchical process where public administrations merely execute policy decisions taken at the top by the central government (Barrett 2006). With this research angle, good or bad implementation has been related to the clarity and adequacy of policy objectives and means, the amount of resources made available, and the chain of command and control steering the entire process (Pülzl and Treib 2006). Additional explanatory value has been assigned to the "complexity of joint action"; according to Pressman and Wildavsky (1973), the involvement of an increasing number of actors is likely to weaken implementation because they can function as veto players.[2]

The involvement of a more articulated set of actors in policy implementation has been the focus of later studies that took a bottom-up perspective on the topic and

[2]Veto players are "individual or collective actors whose agreement is necessary for a change in the status quo" (Tsebelis 2002, p. 19).

directed scholarly attention to lower-level officials and target groups (Barrett 2006; Howlett and Ramesh 2003; Pülzl and Treib 2006). The "street-level bureaucracy" responsible for delivering public policies (e.g., teachers, police officers, nurses, doctors, and social workers) (Lipsky 1980) and the interactions within "implementation structures" of multiple public and private actors (Hjern and Porter 1981) became as important as central policy-makers (Matland 1995).

Both perspectives have strong explanatory value (O'Toole 2000; Pülzl and Treib 2006; Winter 2006) and their contributions have ultimately been merged in synthesizing attempts to study policy implementation. Although several examples exist (e.g., Matland 1995; Winter 1990, 2003), the work by Goggin et al. (1990) is particularly interesting when it comes to the analysis of policy implementation across multiple levels of governance. In this context, *intergovernmental* policy initiatives are heavily affected by subnational capacity and politics.

Subnational capacity includes the availability of multiple types of resources: financial, human, and structural. These are usually scarce in ORs due to the socio-economic conditions of these territories. Subnational politics, instead, refers to the complexity of interactions at multiple levels: among government organizations, both at the central and subnational level; across multiple levels of governance; and between government organizations and target groups.

Subnational politics becomes particularly relevant when processes of decentralization empower subnational authorities through the delegation of political or administrative or both types of powers from the central level to regional authorities. If policy implementation heavily depends on the involvement and support of competent public agencies and responsible officials, then (intra- and inter-) organizational differences in values and interests can lead to different levels of commitment in the execution of a public policy. Indeed, problematic organizational interactions can emerge, from inaction and quiet sabotage to overt opposition (Barrett 2006). Conflictual relations in public administrations may occur – horizontally – across functional divisions and – vertically – between different layers of government (Winter 1990, 2003).

Policy implementation in MLG

Decentralization consists of the territorial distribution of powers to subnational levels of governance in the hierarchy of a state (Hopkins 2002; Smith 1985). It can be political, administrative, or both. Political decentralization occurs when legislative authority is delegated to subnational governments (e.g., Spain). In the specific case of federal (or quasi-federal) states, the constituent units receive their powers not from the central government but from the constitution upon which the federal government is equally dependent (Smith 1985). Administrative decentralization is, instead, limited to the distribution of administrative functions (e.g., in France), while full legislative power remains a prerogative of the central state (Hopkins 2002; Smith 1985).

There is no general agreement on the consequences of decentralization, particularly political, on governmental action and its impact on the environmental performances of a state. Two main positions exist.

On the one hand, decentralization may improve the efficiency and effectiveness of the decision-making process through the mobilization of local resources (e.g., knowledge) and the provision of tailored public services (Smith 1985). The distribution of (political and/or administrative) powers across multiple levels of government can, thus, improve a country's environmental performance both during policy formation and policy implementation (Jahn 1998; Wälti 2004). During policy formation, decentralization allows local concerns and knowledge to enter the policy design so that decisions are taken in response to existing needs (Kelleher and Webb Yackee 2004). During policy implementation, decentralization solves potential conflicts since policy decisions that have included the views of local actors tend to be more aligned with local needs and are perceived as more legitimate (Braun 2000).

Improved environmental governance in multi-level contexts seems to result from higher levels of *responsiveness* and *accountability* of governments to citizens' demands. First, decentralization leads to public decisions that reflect more accurately the policy priorities of the area (Hopkins 2002). Indeed, policy initiatives taken by subnational governments closer to the territory will carry a greater degree of information on the local context and needs, and therefore will permit the development of more responsive programs (Smith 1985). In the national context, subnational issues are swamped among considerations for more general issues (Bardhan 2002). Second, decentralization strengthens the accountability of local politicians and public officials through the establishment of institutions closer to the citizens of a given territory (Hopkins 2002; Smith 1985).

On the other hand, decentralization may weaken environmental policy outcomes by fragmenting the policy process and multiplying stakeholders' veto power. In other words, more decentralized states are likely to have more obstacles in organizing environmental policy-making, adopting central norms, and implementing policies coherently (Braun 2000).

First, decentralization can lead to a *fragmentation of competences* and responsibilities within a state, and determine power imbalances among the responsible entities along the vertical distribution of power.

Second, a multi-level governmental structure can have a negative effect on policy implementation because it increases the number of decisional units and opens implementation to *subnational discretion*. In the context of intergovernmental policies, the implementation process is indeed affected by a political as well as administrative cluster of elected and nominated officials from subnational legislative and executive bodies. Each decisional unit represents a possible veto point that can subvert national policy goals (Goggin et al. 1990; Howllett and Ramesh 2003; Pressman and Wildavsky 1973).

Third, higher accountability of subnational governments (e.g., through electoral renewal) could lead to *policy capture*[3] by strong territorial economic interests (Grindle 1980). The groups targeted by specific policy initiatives have been recognized as pivotal in the process of implementation since the bottom-up studies on the topic (Knoepfel et al. 2007; O'Toole 2000). Their compliance with the policy prescriptions is crucial for the solution of the problem tackled by that policy

[3]"Policy capture is the process of consistently or repeatedly directing public policy decisions away from the public interest towards the interests of a specific interest group or person" (OECD 2017, p. 9).

(Schneider and Ingram 1997). Powerful groups affected by a policy can speed, slow, stop, or redirect its implementation (Hill and Hupe 2009; Howlett and Ramesh 2003).

Materials and methods

The study adopts a qualitative research strategy and relies on case studies as a useful research design to investigate the complexity of policy responses to the loss of biodiversity. Case studies help, indeed, unfold complex patterns and causal dynamics within specific contextual settings (Bryman 2004). In particular, data analysis has followed an abductive approach (Thomas 2010) and used "explanation building" as the main research technique.

With abduction, the article wants to develop theoretical explanations from the close analysis of empirical cases, and claims some degree of generalizability by "bringing together, juxtaposing, seeing similarities across contexts" (Thomas 2010, p. 580). Indeed, the two cases explore possible ways of understanding the problem by tracing regularities and detecting plausible explanatory concepts (Thomas 2010). An abductive design is particularly useful for the scope of this article that investigates a territory at the crossroads between policy implementation and MLG where firm structured theories do not exist (see "Policy implementation"). Absolute laws capable of explaining and predicting all cases have never been developed in the study of either implementation or decentralization (particularly about its impact on environmental performance).

Therefore, existing theoretical insights have been used to guide the empirical analysis but the first findings from the case studies, once compared with the initial theoretical statements, revealed additional aspects worth analyzing deeper (Yin 2003), namely the impact of multi-level and decentralized governance on policy implementation. Furthermore, the study had an exploratory component in its ambition to apply knowledge about policy implementation and MLG in geographical contexts neglected by academic studies (Burns 2000).

Case selection

The case selection was motivated by the relevance of the countries and regions in terms of biodiversity richness and the status of their ecosystems. The two cases also belong to political systems with different degrees of decentralization (see "Policy implementation in MLG").

France is the European country with the largest surface area (549,000 km^2) and the second largest maritime state after the USA (with more than 10 million km^2 of maritime area under its jurisdiction) (OECD 2016a, 2016b). Thanks to its terrestrial and maritime extension and geographical position across oceans, France hosts a large variety of terrestrial and marine ecosystems (MEDDTL 2011). France has 12 overseas entities classified as either ORs or Overseas Countries and Territories (OCTs) of the EU. They present a wide geographic diversity since they are located in three regions of the world – in the Atlantic, Pacific, and Indian oceans – thus covering a large area from the equatorial to the polar zone (Benzaken and Renard 2011). France's ORs and OCTs are home to a very rich biodiversity, but several

species are threatened with extinction (Benzaken and Renard 2011). Indeed, France figures among the 10 countries with the greatest number of habitats in unfavorable state and endangered species. Pressures on the environment (e.g., habitats degradation and pollution) coming from intensive agriculture, urbanization, transport infrastructures, and overfishing are particularly intense in overseas France, which is putting rich biodiversity hotspots in danger (OECD 2016a, 2016b).

Spain is one of the most diverse European countries in terms of biodiversity. It hosts numerous species and important habitats within the EU. Regions of main interest for their biodiversity are the mountainous zones, coastal areas, and insular regions, especially those of the Canary Islands. In particular, the Canary Islands represents one of the richest territories in Spain and in Europe for its biodiversity (Benzaken and Renard 2011). However, the status of biodiversity in Spain is threatened by several human activities: land conversion (i.e., changes in land use) due to coastal urbanization and tourism; overexploitation of natural resources; and pollution from agriculture and manufacturing. Invasive alien species (IASs) and climate change constitute additional pressures on the Spanish environment both in mainland and overseas (OECD 2015b).

Data collection and analysis

Data were collected through document analysis and interviewing. Document analysis included both scientific and gray literature. Initial useful information on environmental governance and biodiversity policy in France and Spain came from scientific literature and reports of international organizations (e.g., OECD) or national governmental bodies. For the subnational component of this study, the reports produced under specific EU funding programs (e.g., Voluntary scheme for Biodiversity and Ecosystem Services in Territories of European Overseas) were particularly useful. The main official acts mentioned in these reports were consulted directly; such acts include legal and strategic documents at both national and subnational level. Internet sources were consulted on the most recent policy developments in both countries and regions. Meanwhile, state/governmental and non-state/non-governmental organizations (NGOs) from both national and subnational levels of governance were contacted for interviews to complement the data collected.

Interviewees included scientists, experts, and practitioners from the two cases. The identification of potential participants for the research interviews was based on "purposive sampling" since the goal was to select interviewees who had a minimum level of understanding of the topic of our investigation (on this point, see Bolderston 2012). Purposive sampling is one of the possible forms of non-random sampling explained by Lynch (2013). The core of purposive sampling is that it "involves selecting elements of a population according to specific characteristics deemed relevant to the analysis" (Lynch 2013, p. 41). The interviewees were identified and selected based on their knowledge and experience in the field. Interviewees from relevant (national and subnational) governmental departments and public agencies included civil servants with competences in environmental protection and spatial planning. Other participants worked for NGOs specializing in environmental issues and biodiversity conservation. Scientists from local universities and research centers were also interviewed.

A total of 12 semi-structured interviews (of about 1 hour each) were conducted in the 2 cases (Reunion Island and the Canary Islands) both in-person and online throughout 2020–2022. It was ensured that there were at least two interviewers for each interview – in some cases three interviewers were present. This was done to ensure objectivity in data analysis. The information emerging from the interviews was noted by each interviewer separately. Later, individual notes were confronted and discussed among the interviewers.

Although the interview protocols were tailored to the two cases (with different emphasis on different questions depending on the affiliation and background of the interviewee), they were based on a common scoreboard to trace and assess the progress in the implementation of international commitments (see Annex 1).

Content analysis was conducted on interviewers' notes and transcripts; interviewees' answers were encoded, systematized, cross-checked, and connected to present a valid, comprehensive, and unbiased overview of the findings. Data obtained during the interviews were treated in a way that makes it difficult to trace the exact source; this was done on purpose, to respect the commitment to the principle of anonymity and confidentiality. The content of the interview is referred to by the use of a code for each interview file. The information given by respondents was accepted at face value.

Mosley (2013, p. 11) warns that "converting interview transcripts and answers into more discrete concepts and categories always involves some type of interpretive work." However, the contents of the interviews have been validated by experts in the field from the two different case studies. Indeed, data analysis relied on two major moments of validation. First, draft of the study informing this article were reviewed by experts from the two countries (France and Spain). Second, a validation workshop was held online in April 2023. In this occasion, practitioners and decision-makers from the two ORs discussed the study and provided additional updates that help the authors refine the content of the study.

Biodiversity policy in France and Spain

MEAs and EU law are enacted by national governments and legislatures through the adoption of national laws. Both France and Spain have put in place a complex system of legislative instruments and national strategies for biodiversity and the marine environment (Table 2) that usually apply to their ORs with few exceptions.

France

The national policy framework

In France, environmental matters are ruled by national laws that apply to the entire mainland and overseas territory of the country. The French legal framework for biodiversity did not have major changes between the 1970s and 2016, when a new law on biodiversity was adopted, that is, *Loi n°2016–1087 pour la reconquête de la biodiversité, de la nature et des paysages* (Table 2) (OECD 2016a, 2016b). France has also adopted several National Biodiversity Strategies in compliance with the CBD in 2004, 2011, and 2022. The second Strategy (2011) confirms France's commitment to the conservation of biodiversity on both mainland France and in its overseas

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Table 2. Summary table

		France	Reunion Island	Spain	Canary Islands
Laws	*Biodiversity conservation*	• Loi pour la reconquête de la biodiversité, de la nature et des paysages (2016)		• Law 42/2007 on Natural Heritage and Biodiversity (2007)	• A regional law for biodiversity is foreseen
	Marine environment			• Law 41/2010 on the Protection of Marine Environment (2010) • Law 2/2013 for the Protection and Sustainable Use of the Coast (2013)	
Strategies	*Biodiversity conservation*	• First National Biodiversity Strategy (2004) • Second National Biodiversity Strategy (2011) • Third National Biodiversity Strategy 2021–2030 (2022)	• Stratégie Réunionnaise pour la Biodiversité (a new regional biodiversity strategy is under development) • Stratégie de conservation de la flore et des habitats de La Réunion • Stratégie de lutte contre les espèces invasives à La Réunion	• Plan Estratégico del Patrimonio Natural y la Biodiversidad (2011) • Plan estratégico estatal del patrimonio natural y de la biodiversidad a 2030 (2022)	
	Marine environment	• Stratégie nationale pour la mer et le littoral (2017)	• Stratégie pour la mer et le littoral du bassin maritime Sud Océan Indien (2020)		

territories and promotes the adoption of regional (and local) strategies for biodiversity conservation. France ratified the CBD in 1994 and is party to this Convention also on behalf of its overseas entities[4] (Benzaken and Renard 2011; MEDDTL 2011). France has complied with EU commitments, such as the Nature Directives of the EU, but these two Directives (i.e., Habitats and Birds Directives) do not apply to the French ORs (Rouillard et al. 2016). Finally, the country adopted the *Stratégie nationale pour la mer et le littoral* in 2017 in compliance with the Marine Strategy Framework Directive (MSFD) and the Marine Spatial Planning Directive (MSPD) of the EU (Table 2).

Environmental policy in France is coordinated at the central level by the Ministry for the Ecological Transition[5] (MET) and conducted at the subnational level (in regions and departments) by decentralized bodies of the central government.[6] These are the *Direction de l'environnement, de l'aménagement et du logement* (DEAL) in the regions, and the *Directions départementales des territoires* (DDT) and *Directions départementales des territoires et de la mer* (DDTM) in departments. The work of MET is supported by two implementing agencies, that is, the *Agence de la Transition Écologique* and the *Office français de la biodiversité* (OFB).[7] The Ministry of the Sea is competent for sea-related policies (e.g., *Stratégie nationale pour la mer et le littoral*), and the General Inspectorate of Maritime Affairs conducts the necessary inspections. The Ministry also has decentralized services responsible for implementing maritime policies in each basin, that is, the Interregional Directorates of the Sea. The Coastal Conservatory has a special role in the protection of the coast through the acquisition and restoration of threatened coastal areas.

Policy implementation

The implementation of environmental and biodiversity policies in France is the responsibility of the decentralized administration including regions, *départements*, and municipalities. France has, indeed, embarked on a decentralization process since the early 1980s. As a result of these institutional changes, regions in France have taken over a leading role in important policy domains such as environment, biodiversity, and several others (e.g., climate change, infrastructures, and transport) (Interview FR02). The French region is managed by a Regional Council (*Conseil Régional*) and constitutes the highest level of subnational governance. The Regional Council works as a strategic coordinator producing regional schemes and strategic documents with competences mainly on economic development and biodiversity (Interview FR01). In the area of biodiversity, important powers are also shared by the regions with their *départements*; the latter are competent, for instance, for the

[4]However, competences for biodiversity conservation differ according to the legal status of each entity. While the French state is the main authority for biodiversity conservation in its ORs, biodiversity conservation falls under the territorial jurisdiction of the local authorities in the French OCTs (Benzaken and Renard 2011).

[5]Source: https://www.ecologie.gouv.fr (last access: 18.03.2021).

[6]Source: https://www.ecologie.gouv.fr/services-deconcentres-du-ministere (last access: 18.03.2021).

[7]In compliance with the Biodiversity Law of 2016, a national biodiversity agency, that is, *Agence Française de la Biodiversité* (AFB), was created in 2017 with the aim of coordinating various public agencies competent for biodiversity. The AFB was replaced by the OFB in 2021 (Interview FR02).

management of natural areas and water use. Below the *départements*, the municipalities prepare local urban planning documents, collect and process household waste, and manage aquatic environments among other tasks (OECD 2016a). With very few exemptions (e.g., for subventions and funding), regions in France do not have legislative power (Interview FR01).

Despite France's decentralization process, the state is still very present in the regions through its decentralized bodies (i.e., DEAL) that respond to regional prefects (OECD 2016a). The distribution of powers in the French territorial organizations has been clarified and improved under several acts in the last decade. Two laws, that is, the MAPTAM[8] Act (2014) and the NOTRE[9] Act (2015), mark an important reform in the institutional arrangement of the state (OECD 2016a, 2016b). However, overlaps between the central government, its national decentralized services, and national public agencies, on the one hand, and multiple layers of subnational administration authorities, on the other hand, still exist. These overlaps in competences have hindered in the recent past the implementation of national policies, particularly in the area of the environment (OECD 2016b).

The regional level

Reunion Island is one of France's *départements et regions d'outre-mer* (DROM); it is also an OR of the EU (Tanguy et al. 2017). Environmental governance in Reunion is multi-level: it includes national, regional, departmental, and municipal authorities. The national government is present in the island through the *Préfecture* that supervises the activities of the decentralized services of the state such as the DEAL. Established in 2011, the DEAL executes and enforces at the subnational level the MET's decisions about biodiversity. The Regional Assembly (*Assemblée Régionale*) of 45 elected representatives guides a regional administration of 2,300 civil servants while the Regional Council is the government of the island (Interview FR06).

As a region of France, Reunion is bound to comply with a set of international conventions signed by the state such as the CBD (Tanguy et al. 2017). In its action, the region is also guided and constrained by the national legislative framework (Table 2) and its alignment with EU law. The adoption of a national Biodiversity Law in 2016 has provided the means for a stronger action of the region in the area of biodiversity through better organizational coordination and longer strategic planning at regional level (Interviews FR04, FR05, and FR06).

First, the new Biodiversity Law gives the French regions the possibility to create a regional biodiversity agency or *Agence régionale de la biodiversité* (ARB) (Interview FR02) conceived as the regional translation of the OFB (Interview FR02 and FR06). Although this is not an obligation imposed from the central government, Reunion has created its own ARB in 2023 based on a partnership between the state (through the DEAL), the Regional Council, and the OFB (Interview FR02 and FR06).

Second, Reunion has issued regional strategic documents. In compliance with the Biodiversity Law 2016, Reunion has adopted the *Stratégie Réunionnaise pour la*

[8]Full name: *Loi du 27 janvier 2014 de modernisation de l'action publique territoriale et d'affirmation des métropoles*.

[9]Full name: *Loi portant sur la Nouvelle Organisation Territoriale de la République*.

Biodiversité (SRB). The document translates the second National Biodiversity Strategy of 2011 at the regional level and constitutes the first regional strategic document on biodiversity bringing together state, region, and *département*. The SRB has been complemented by two other strategic documents: *Stratégie de conservation de la flore et des habitats de La Réunion* and *Stratégie de lutte contre les espèces invasives à La Réunion*. Another regional strategy was recently adopted for the period 2020–2026[10] as subnational implementation of the *Stratégie nationale pour la mer et le littoral* of 2017 (Tanguy et al. 2017; Interview FR02) (Table 2).

The current SRB will be followed by a new regional biodiversity strategy that is currently being formulated with the engagement of different stakeholders (Interviews FR06 and FR07). The new SRB will be shaped around the lines of action of the ARB to ensure more coherence within the region (Interview FR02). However, some interviewees shared doubts about the effective alignments of the ARB's future action with local concerns and priorities; frictions between regional and local authorities have been reported during interviews in Reunion (Interviews FR04 and FR05).

The allocation of public funding for environmental policy is constrained, in Reunion, by the socio-economic priorities that crowd the regional policy agenda like job creation (Interview FR03). EU funding has somewhat compensated for the lack of sufficient resources, but these funds are usually project-based and, hence, have a short-term perspective and impose additional administrative burden to the workload of civil servants (Interview FR04). Insufficient funding reflects on the administrative capacity of the region. Many ORs of France suffer from scarce administrative capacity understood as financial resources, skills present in public agencies and working time available for civil servants. In the specific case of Reunion, even when financial resources are sufficient, the lack of sufficient qualified staff can play against the effective implementation of national biodiversity policy objectives (Interviews FR04 and FR08).

Policy results

Biodiversity policy in France relies on a set of policy instruments that include regulatory tools (e.g., protection of areas, habitats, and species), economic measures (i.e., those financing actions against biodiversity loss), and other interventions (from information campaigns to restoration initiatives through direct governmental intervention) (OECD 2016a). In particular, the momentum given to protected areas by France's second National Biodiversity Strategy has helped the country reach the international objectives of protecting at least 17% of its land area and 10% of the waters under its jurisdiction in line with the CBD and the Aichi Targets adopted internationally in 2011 (OECD 2016b). In fact, one-third of French waters (both in metropolitan and overseas France) are now marine protected areas (Claudet et al. 2021). France has also established protected areas as part of the Natura 2000 network. This network gives effect to the two EU Nature Directives through the

[10]*Stratégie pour la mer et le littoral du bassin maritime Sud Océan Indien (La Réunion – Mayotte – Terres Australes et Antarctiques Françaises)* (source: http://www.dm.sud-ocean-indien.developpement-durable.gouv.fr/le-document-strategique-de-bassin-maritime-dsbm-r247.html (last access: 21.10.2021).

creation of special conservation zones for habitat types (under the Habitats Directive) and special protection zones for wild bird species (under the Birds Directive) (OECD 2016a). However, the Nature Directives do not apply to Reunion as well as to all other DROMs (Interviews FR02, FR05, and FR06).

The level of protection of areas is higher in overseas France according to the OECD (2016a). In particular, Reunion has put in place a good regulatory framework for the protection of its areas both on land and in the sea (Interview FR04). Although the Regional Council can establish regional parks and reserves, all protected areas of Reunion have been established by the state (Interviews FR06 and FR07). The *Parc national de La Réunion* was created in 2007 and covers 42% of the territory of the island; it is fully funded by the state (through the MET). After initial issues, a management plan was adopted in 2014, that is, *Charte du parc national*. The island also has two national natural reserves. The first is the *Réserve nationale marine de La Réunion* (created in 2007). It has its own management plan (that is elaborated in collaboration with relevant stakeholders) and is funded by both the state and the region. The second is the *Réserve de l'étang de Saint-Paul* (created in 2008) (Tanguy et al. 2017; Interviews FR02 and FR05). The region (as well as the state and the *département*) is present in the management bodies of both the National Park and the Marine Reserve (Interview FR02). Several other areas are under some form or protection (as reserves) for habitats and species (Tanguy et al. 2017).

France has improved its protection of certain habitats, too, and has elaborated action plans to restore and conserve populations of endangered species. These national action plans for habitats and species' conservation have proven to be successful (OECD 2016a) and are implemented in Reunion under several regional strategies (see above) (Benzaken and Renard 2011). Finally, France has formulated strategies and action plans to combat IASs (Benzaken and Renard 2011; OECD 2016a). However, IASs still represent a major threat to the local flora in Reunion despite the numerous policy initiatives (Interviews FR02, FR04, and FR06).

Spain

The national policy framework

For long time, Spain did not have a consolidated national environmental law, but several legislative texts supported by multiple strategies and programs. The country has made major changes to improve its legislative framework for the protection of biodiversity since the early 2000s in response to international obligations and EU law (OECD 2015a). Spain's biodiversity policy rests on two key documents: Law 42/2007 on Natural Heritage and Biodiversity (adopted in 2007) and Law 41/2010 on the Protection of Marine Environment[11] (issued in 2010) (Table 2).

Law 42/2007 on Natural Heritage and Biodiversity constitutes the core legal document for the conservation, restoration, and enhancement of biodiversity in Spain. The new law incorporated Spain's commitments to several international agreements, including the CBD (that Spain ratified in 1993), and transposed the

[11]Another important law for marine and coastal areas is Law 2/2013 for the Protection and Sustainable Use of the Coast that enhanced the measures adopted to protect the coast, prevent habitat fragmentation, and avoid loss of coastal biodiversity (OECD 2015a).

Nature Directives of the EU. It also consolidated several previous national Biodiversity Laws and established the Strategic Plan on Natural Heritage and Biodiversity (*Plan Estratégico del Patrimonio Natural y la Biodiversidad*) as pivotal for Spain's strategic planning in the domain of nature conservation (OECD 2015a, 2015b; Real Decreto 1274/2011). The Strategic Plan supports the implementation of Law 42/2007 and works as the national strategy for biodiversity requested by the CBD (OECD 2015b). Spain's current Strategic Plan was issued in 2022 (*Plan estratégico estatal del patrimonio natural y de la biodiversidad a 2030*)[12] (Table 2).

In 2010, Spain also adopted Law 41/2010 on the Protection of Marine Environment in compliance with the MSFD of the EU. While Law 42/2007 constitutes the major legal instrument governing all aspects of biodiversity policy, Law 41/2010 establishes a comprehensive framework for the preservation of marine ecosystems in Spain. Under the new law, the country also commits to develop marine strategies for its five marine demarcations: North Atlantic, South Atlantic, East-Balearic Sea, Gibraltar Strait/Alboran Sea, and the Canary Islands (OECD 2015a).

In Spain, the central administration sets the main legal framework and strategic planning for environmental policies for the whole country and is responsible for the transposition of MEAs and EU environmental law. The MET and the Demographic Challenge (*Ministerio para la Transición Ecológica y el Reto Demográfico)* (MITECO) is responsible for the development of national policies for biodiversity conservation, marine affairs, coastal management, and climate change (Interview ES01). The national administration also steers the implementation of environmental policies at the regional and local level (OECD 2015a, 2015b). The enforcement of the national legislation for biodiversity conservation is a competence of the Service for Nature Protection (OECD 2015a, 2015b). The Biodiversity Foundation is part of MITECO and is responsible for the implementation of conservation projects and the management of national and European funds for conservation. Marine and coastal biodiversity, and climate change are among its competence areas.

Policy implementation

Environmental governance in Spain is highly decentralized (OECD 2015b). After the adoption of a new constitution in 1978, Spain started a process of decentralization that has turned the country into a quasi-federal system. Today, Spain is divided into 17 autonomous regions called *Comunidades Autonomas* (CAs) and two autonomous cities (i.e., Ceuta and Melilla) with the consequent redistribution of political and administrative power between central and autonomous authorities. Each CA has its own institutions – that mainly consist of a president, an elected legislative assembly, and a government (with executive and administrative functions) – and is governed by its own legal and regulatory framework. The different CAs benefit from different levels of autonomy (OECD 2015a).

The Spanish constitutional setup recognizes competences to both the state and the CAs. Competences can indeed be exclusive, shared, or concurrent. In the case of concurrent competences, the state only defines the essential aspects in a framework legislation and leaves its completion to the CAs through regional laws and

[12]Source: https://www.boe.es/eli/es/rd/2022/12/27/1057/con (last access: 23.05.2023).

regulations. Most policy areas are a shared responsibility between the state and the CAs, which can generate ambiguity, inconsistency, and duplication.

In general, all 17 CAs have a high degree of autonomy in the domain of environment. Each CA usually has an environmental department (*Consejería*) (OECD 2015a); at the local level, the *Consejerías de Medioambiente* play a crucial role in environmental protection (Interview ES02). The CAs have primary responsibilities for the implementation of biodiversity policies. They are crucial in the execution and enforcement of environmental policies by defining environmental priorities in their territory, adopting given policy instruments, deciding funding programs, issuing licenses and permits, and sanctioning non-compliance (OECD 2015a). At the local level, provinces and municipal authorities can have some environmental regulatory competences (e.g., licensing) (OECD 2015b).

Several mechanisms ensure the vertical coordination in environmental matters between MITECO and the central administration, on the one hand, and the subnational authorities, on the other hand: the Sectoral Conference on the Environment and the State Commission on Natural Heritage and Biodiversity. Despite such efforts, central–regional relations often remain blurred, complex, and weakened by conflictual claims of regional autonomy. This has often led to ambiguities, inconsistencies, and voids with regard to institutional roles and competences. Decentralization has hindered the adoption of a coherent policy framework for biodiversity and the application of environmental requirements consistently across regions. Uncertainties often exist also regarding the roles of regional, provincial, and municipal levels of government in the provision of environmental services (OECD 2015a).

The regional level

The Canary Islands obtained its autonomy in 1982, after the establishment of a democratic constitutional monarchy in Spain. As one of the 17 CAs of Spain, the Canary Islands has its own government and parliament, and exclusive competences in several fields: land, coastal, and water management; nautical tourism; regional ports; protection of marine flora and fauna; hunting, fisheries (only in inland marine waters), and aquaculture; marine reserves; and other environmental protection measures (Benzaken and Renard 2011; Menini et al. 2018). Both the national government and the CA are responsible for biodiversity and the marine environment (Interview ES02). The seven local governments present in the Canary Islands are responsible for terrestrial ecosystems (Interview ES02).

While MITECO constitutes the most important authority at the national level for biodiversity policy, in the Canary Islands, two departments (*Consejerías*) within the regional government are responsible for the environment: the Department for Ecological Transition, Fight against Climate Change, and Territorial Planning and the Department for Agriculture, Livestock, and Fisheries.[13] The Canary Islands also has two regional agencies for biodiversity and climate change: *Agencia Canaria de Protección del Medio Natural* and *Agencia Canaria de Desarrollo Sostenible y Cambio Climático* (Interview ES01).

[13]Source: https://www.gobiernodecanarias.org/organigrama (last access: 02.07.2021).

The Canary Islands can complement the national framework for biodiversity with regional regulations and plans (Interview ES01). The regional government is developing a regional law for biodiversity at the time of writing (Spring 2023) (Interview ES02).

Both CBD and the National Biodiversity Strategy (see above) are applicable to the Canary Islands. In addition, the Canary Islands can approve its own regional strategy; yet such strategy has not been formulated. However, the region has implemented several actions for biodiversity protection and conservation. Below the regional level, conservation activities have been developed and executed by the governments (or *Cabildos*) of every single island composing the CA. Some insular governments have also formulated their own insular biodiversity strategies in line with the CBD, EU biodiversity policy, and the national strategy. Some municipalities, too, have taken action in biodiversity policy since they have competences in some aspects of nature conservation and biodiversity management (Benzaken and Renard 2011).

The Canary Islands lacks a marine strategy; the strategies for marine basins mentioned above need to be developed by the central government since it falls within the national competence. However, the regional government is preparing a marine spatial plan (Interview ES02).

In general, policy implementation in the Spanish CAs faces financing and staffing limitations (OECD 2015a; confirmed by Interview ES01). In particular, the administrative capacity of the Canary Islands is constrained by the small dimension, slower economic development, and insularity of this region (Interview ES02). In this context, national budget cuts further threaten the ability of subnational governments to conduct important biodiversity activities such as managing and maintaining protected areas (OECD 2015b; Real Decreto 1274/2011): monitoring is costly and enforcement requires personnel. The scarcity of financial and human resources weakens the management of protected areas in the Canary Islands, too (Interview ES01). A special national financial support is foreseen for this OR, but such funding mechanism does not always work effectively (Interview ES02).

Furthermore, weak administrative capacity in the Canary Islands also jeopardizes the evidence base needed for environmental decision-making. Indeed, a comprehensive knowledge of the status of habitats across the seven Canary Islands of the archipelago is missing. This is not due to the lack of data available but to the scarcity of human resources who can process such evidence. The personnel of the regional administration is very small compared to the amount of available data that is collected and elaborated by the two major academic institutions of the region (Interview ES02).

Policy results

Several policy instruments have been put in place in Spain to protect biodiversity, ranging from economic measures (e.g., financial incentives) to voluntary actions (e.g., restoration initiatives). However, biodiversity policy has traditionally relied on species protection programs and – more importantly – protected areas particularly since Law 42/2007 on Natural Heritage and Biodiversity gave them new momentum (OECD 2015a).

To simplify a complex matter, protected areas in Spain are proposed by the regional authority to the central administration (i.e., MITECO) that decides whether to designate those proposed areas (Interview ES01). Later, the management of the areas is a full competence of the regional government. Where capacity is present, also the government of the various islands (i.e., *Cabildos*) share management responsibilities with the region (Madruga et al. 2016). Finally, enforcement (with staff and equipment) is conducted entirely by the central government (more precisely, MITECO) and its personnel in the region (Interview ES01).

The establishment of protected areas in Spain fully responded to the requirements of the EU Nature Directives (OECD 2015a). According to the OECD (2015a), the Spanish territory under some form of protection covers almost 30% of the country; marine protected areas cover almost 10% of the territorial waters (OECD 2015a). This means that Spain has achieved (and exceeds) the Aichi Targets for terrestrial protected areas and is close to reach the target for marine protected areas (OECD 2015a). The CAs with the highest percentages of protected territory are, in decreasing order: Canary Islands (77%), La Rioja (51%), Madrid (41%), and Valencian Community (39%). Vast protected areas are also present in other regions (e.g., Andalusia, Castile and León, and Castile-La Mancha) (OECD 2015a).

In particular, the Canary Islands has seen a clear increase from 40% of its territory under some form of protection in the early 2010s (Benzaken and Renard 2011). However, the protection in the archipelago is quite different if considered on land or at sea. On the land, about one-third of the region's surface is protected; in the sea, only a minor part is protected (Interview ES01). The reason for this difference has to be found in the time needed to gain public acceptance for a new marine protected area (Interview ES01). Furthermore, most MPAs established in the Canary Islands have management plans, but actual enforcement of protection remains challenging. An adequate number of human resources (i.e., personnel) and technical assets (e.g., technology when people are insufficient) are needed to monitor the protection of marine areas that are dispersed across the seven islands of this CA (Interview ES02).

Under Law 42/2007, Spain adopted national conservation strategies that have led to the recovery of populations of some endangered species. However, further efforts are needed since many species are not covered by these strategies (OECD 2015a; OSE 2012). Species are protected under Spanish and regional catalogs (of protected species). "Inclusion on these catalogues implies the application of protection measures that range from preventing the capture to active management through conservation or recovery plans, which may include designating critical areas for biodiversity conservation" (Madruga et al. 2016, p. 109). From data collection, no alarming situation of endangered species has been reported for the Canary Islands (Interview ES01). The major problem reported for this region is the inclusion of a species in the abovementioned catalogs. This can involve a lengthy process mainly because of the lack of robust evidence about the endangered status of a species. Indeed, there is a general lack of data and of coordination of data in the Canary Islands: multiple data sources and datasets exist, but they are not integrated (Interview ES02).

The Canary Islands has also adopted several control measures against IASs (e.g., the Californian snake introduced by humans) (Interview ES02) that have led to some positive results (Interview ES01).

Finally, there are restoration actions in the Canary Islands, but the region lacks a formal program that finances this type of actions in a systematic way. They are ad hoc interventions funded on a case-by-case basis. Results have often been disappointing or simply not monitored for sufficient time due to the lack of funding (Interview ES02; Interview ES01).

Implementation hindrances: regional cases compared

Since the early investigations on policy implementation, its success and failure have been considered the result of many factors, with particular attention to the complexity of joint action (Pressman and Wildavsky 1973). It is generally assumed that the involvement of an increasing number of actors acting as potential veto points can jeopardize the execution of public policies. The complexity of implementation structures of public and private actors (Hjern and Porter 1981) is even higher in political systems characterized by multiple levels of governance (Goggin et al. 1990). In these contexts, the subnational politics – played between public and private organizations at central and subnational levels – is pivotal in the implementation of intergovernmental policies. This is particularly true where processes of political and/or administrative decentralization have delegated more powers to the subnational authorities at the regional and local level. Indeed, different values, interests, priorities, and objectives may prevail at the different layers of governance, with a consequent variation in the level of commitment to the implementation of specific policies (Barrett 2006).

In the specific domain of environmental policy, while some authors claim that decentralization and MLG benefit the environment through more responsive policy interventions and more accountable decision-makers (e.g., Bardhan 2022; Hopkins 2002; Smith 1985), others (e.g., Braun 2000; Grindle 1980; Howllett and Ramesh 2003) tend to disagree. This argument relies on the possible fragmentation of competences, subnational discretion, and policy capture by powerful interests that decentralization can cause. The cases presented in this article offer interesting insights on these points.

Fragmentation of competences and power imbalances

Decentralization can lead to a fragmentation of competences and responsibilities, and cause power imbalances along the vertical distribution of power ("Policy implementation in MLG"). The same design given to the implementing machinery can generate conflicts based, for instance, on the unclear division of competences. Therefore, negotiation and consensus building between policy-makers (at the top) and administrative implementing agencies (at the bottom of a political system) are crucial for policy implementation.

In Reunion, these issues affect the governance of biodiversity (Interview FR02). Although horizontal fragmentation across policy areas has been reported as a weakness (Interview FR08), more problems have been attributed to the vertical

distribution of power that has followed the decentralization process in France (Interview FR09). The division of competences across the multi-level French system has for long time created ambiguity among the many political and administrative actors and determined conflicts (Interview FR03). In the absence of efficient coordination among regional actors and between regional and national competent authorities, the same implementation of national, EU, and international policies is jeopardized and weakened (Interview FR04). For instance, France issued its official document for MSP for the whole country (including ORs) in 2017 (Table 2) in compliance with the MSPD. Later, overlapping competences across jurisdictions with blurred delimitations have slowed down the implementation of the MSPD in France. Better coordination should be pursued both among regional actors and between national and regional competent authorities. The creation of the ARB may improve this aspect (Interview FR04).

In addition to the bureaucratic pressures exerted "from above" by the central administration, Reunion's public administration has been exposed to a bureaucratic pressure coming "from below." The *département* is the island's largest landowner with more than 100,000 ha of land (Tanguy et al. 2017). This administrative layer has traditionally been directly involved (and adequately staffed) in the environmental policy domain often as a partner of the central administration in the execution of national policy initiatives (Interviews FR05–FR07). This has created some tensions with the region and clashes of competences while the regional powers were being increased. Ambiguities in the attribution of responsibilities has constituted a recurrent externality of the decentralization undertaken in France (OECD 2016a, 2016b).

Vertical fragmentation also creates confusion among the beneficiaries of public policies, as it was reported during field research: "These changes generate a lack of local understanding of institutional scales (dilution of responsibilities by an excess of interlocutors) as well as a tension in the relationship of power in the territory, a source of confusion and conflict. We don't know who is listening to us, or who is decisive in decision-making" (Interview FR03).

In the case of the Canary Islands, some problems of horizontal coordination at the regional level emerge as well as discrepancies between the national and regional level (Interview ES03): "There are national and subnational legislations and sometimes conflicts emerge despite a coordination effort" (Interview ES03).

In general, a satisfactory level of cooperation exists among the several layers composing the Spanish system of governance (Interviews ES01 and ES02). The CA has and uses permanent channels of communication and connection with the central administration that allow the national administration to monitor the implementation of Biodiversity Laws by the regional and local authorities (Interview ES02 and ES03). In addition, the Canary Islands is characterized by a good institutional interaction among all actors involved in biodiversity at the regional level: government departments, research laboratories, universities, NGOs, municipalities, and insular governments (Benzaken and Renard 2011).

In the Canary Islands, relations are somewhat less harmonious between the region and the subregional level (i.e., the government of the CA and *Cabildos*, respectively). This is mainly due to a strong sense of appropriation of the territory that goes along with the insular culture within the archipelago. Individuals from

each island tend to think that "this is my island; this is mine and nobody – especially from another island – is going to interfere" (Interview ES01). Low coordination across the islands is, thus, explained rather by cultural features of the region than administrative constraints or technical difficulties (Interview ES01).

To sum up, both cases confirm the complexity of MLG due to the fragmentation of competences across the numerous levels present in a political-administrative system (national, regional, and local). Vertical clashes increase in the absence of institutional arrangements and cultural predisposition for coordination and collaboration.

Subnational discretion versus responsiveness

Decentralization may lead to public decisions that better reflect the territorial priorities, thus allowing the development of more responsive programs. However, organizational differences in values and interests can lead to different levels of commitment to implementation and problematic organizational interactions – from inaction and quiet sabotage to overt opposition. In particular, a multi-level governmental structure can have a negative effect on policy implementation because it increases the number of decisional units and opens implementation to subnational discretion. Each decisional unit represents a possible veto point that can subvert the national policy goals ("Policy implementation in MLG").

France has complied with key international and EU documents for biodiversity conservation and updated its policy framework for biodiversity conservation. National laws and strategies have been complemented by regional strategic documents in some regions of the country such as Reunion (Table 2). The political attention for environmental matters and biodiversity conservation in this OR is largely motivated by economic considerations. Indeed, the good status of biodiversity constitutes an important asset for tourism, a sector that heavily contributes to the regional economy (Interview FR01). The regional political agenda is actually focused on economic development and job creation since unemployment is high, particularly among the younger generation (IEDOM 2015). The rate of unemployment in Reunion was 48% in 2020; it was 26% for people among 15 and 29 years of age in the same year.[14] In the absence of a clear commitment to biodiversity conservation per se (decoupled from the economic agenda), environment risks to be given less relevance in the regional political agenda any time that economic development and environmental protection may diverge.

Indeed, local development and the fight against poverty remain the policy priority on the regional agenda. As stressed during interviews, "locally, poverty is a major issue, with massive unemployment. There is also a belief in the need for economic growth. In view of these social problems, purely ecological decisions are poorly accepted" (FR03). The responsiveness deriving from decentralization can actually divert the regional actions toward specific policy priorities that are not in line with the central commitment to biodiversity protection: "Even if elected officials are generally refractory, the State aligns itself with national and international issues. The national and international framework makes it possible to strengthen

[14]Source: https://www.insee.fr/fr/statistiques/5354321#consulter (last access: 27.04.2022).

protection which is an issue that is very poorly perceived here, people do not pay attention to it. Little consideration of biodiversity and ecological transition. The allies in favour of biodiversity are the State services and not the local authorities, it is not concretely on them that we can count" (Interview FR03). Therefore, the role of the state remains important: "So, it is true that biodiversity management must integrate local levels, but it also requires the presence of the central state" (Interview FR06).

In Spain, the national policy framework sets targets and boundaries for the 17 CAs of the country. The laws and strategies adopted by Spain comply with the international and EU obligations for biodiversity conservation and the protection of the marine environment. Unlike the French regions, all CAs of Spain have the power to adopt legislative instruments in addition to the national acts; nonetheless, regional laws for biodiversity have not been issued in the Canary Islands (Table 2).

Misalignments in agenda prioritization – moving from international targets to national policy design and subnational implementation – were not reported in the case of the Canary Islands. A possible explanation can lie in the good coordination between national and regional lines of policy interventions (OECD 2015a).

In conclusion, national and regional political agendas may differ in issue prioritization, thus making policy objectives contextually unachievable. However, good intergovernmental coordination may avoid discrepancies in the pursuit of shared biodiversity conservation objectives.

Policy capture versus accountability

Institutions established closer to the citizens are expected to increase the accountability of local politicians and public officials (e.g., through electoral renewal). However, this can lead to episodes of *policy capture* by strong territorial economic interests ("Policy implementation in MLG"). The groups targeted by specific policy initiatives have been recognized as pivotal in the process of implementation since the bottom-up studies on the topic ("Policy implementation"). Their compliance with the policy prescriptions is crucial for the solution of the problem tackled by that policy. Powerful groups affected by a policy can speed, slow, stop, or redirect its implementation (Hill and Hupe 2009; Howlett and Ramesh 2003).

In France, the state administration is compliant with international and EU commitments, but subnational elected representatives may be reluctant to adhere to new national and international obligations for the protection of biodiversity (see above). Conservation is, indeed, not always prioritized by regional and local politicians in Reunion. Other issues, such as tourism and fisheries, seem to prevail in the political action that is heavily exposed to the strong pressure of local (economic) interests (Interview FR03). Tourism and fisheries are just two examples of the many "conflicts of use" of the (marine and coastal) environment that exist in the region (Interview FR01).

Conflicts with social and economic interests can be partially solved through public participation in decision-making, but a participatory culture is still too weak in Reunion. On one side, decision-makers are not used to involving citizens in public decisions – despite some rhetorical commitment. According to an

interviewee in Reunion, public participation in the island is improving slowly but, ultimately, decisions are taken behind "closed doors" (Interview FR03). On the other side, citizens are not familiar with public engagement (Interview FR04). Citizens' pressure on decision-makers is traditionally very weak and punctuated by episodes of civil disobedience, protest, and demonstrations. On some occasions, citizens' disagreement can find expression in very violent forms of protest (e.g., death threats) (Interview FR03). Public awareness about environmental matters is quite low in Reunion. The value and related messages of nature preservation are quite recent and cultural change will take time (Interview FR08).

Likewise, the Canary Islands experiences several conflicts of uses on the land and at sea, namely between coastal (and urban) development, tourism, fishing, and aquaculture (Interview ES01). For coastal areas, the major conflict of use is due to development projects (e.g., the building of infrastructures like ports). In marine areas, the main threat is overfishing. The presence of multiple, strong, and competing socio-economic interests makes the social acceptance of protected areas, particularly at sea where they are more needed, a very slow process. Indeed, MPAs have not expanded considerably in the Canary Islands in the last decades mainly because the process of acceptance is lengthy and complex (Interview ES01).

In the Canary Islands, a forum for the gathering and engagement of all potential stakeholders is still missing (Interview ES01). At the moment, there is not a venue for broad societal representation. Often, the interest that prevails in the region's efforts of public engagement is fisheries. This is due to the economic relevance of the fishing sector, particularly in recent years when the COVID pandemic and the volcanic eruption in La Palma heavily impacted tourism, the major source of revenue in the region (Interview ES01). Several organizations represent professional fishers (e.g., *Cofradía de Pescadores*) and participate in decision-making to produce agreed decisions. However, non-professional fishers (like sport fishing) are the ones responsible for more than 40% of the catches in the Canary Islands. Existing laws and regulations only target professional fishers, which creates a problematic regulatory void. The result is that an increasing number of fishers are moving from professional to sport fishing to escape regulations (Interview ES02).

Both cases confirm the importance of balanced and inclusive interactions with all target groups for easing the implementation of biodiversity policy initiatives and avoiding the danger of policies being captured by strong vested interests. However, this implies cultural changes in terms of public participation and environmental awareness both on the side of the decision-makers and on the side of the civil society. Such cultural and ideational changes are never easy or immediate (Ferraro et al. 2022). This risks to compromise any political effort toward biodiversity conservation unless a strong commitment not only to stakeholder engagement but also to public awareness and environmental education is seriously pursued.

Conclusions

The future of nature with its living and non-living resources and what should be done to protect and conserve the natural world has become the object of political debates and academic research. Although conservation is usually accepted as the

desirable goal, how to achieve this goal constitutes the source of many conflicts. A wide literature has explored multiple combination of different policy solutions and governance mechanisms. However, their adoption and implementation often face strong resistance motivated by the urgency of economic development.

Biodiversity loss is one of the contemporary most alarming global problems and, as such, it calls for global solutions. More precisely, "global" will have to be understood as "multi-level," thus including multiple jurisdictions from international to national and subnational levels of governance. Unfortunately, existing governance systems often lack effective mechanisms to improve integration between the international, national, and subnational scales.

The article has shed some light on the complex set of dynamics that develop at the subnational level when policy objectives complying with international commitments and EU obligations need to be pursued through the implementation phase in different countries and their regions. Regional governments and administrations are pivotal in the conservation of biodiversity since they translate international targets and national biodiversity policy objectives into concrete actions through tangible initiatives and direct relations with their citizens.

In terms of policy results (outputs and outcomes), Reunion Island in France seems to have put in place an elaborate policy framework for biodiversity protection. Despite France's administrative decentralization process, the state is still very present in its regions, including ORs, both in environmental decision-making and direct interventions (e.g., MPAs). By contrast, the Canary Islands is still developing its legal and regulatory framework, although the region is empowered with strong autonomy in the quasi-federal setting of the Spanish political system.

The misalignment of international policy targets with national and subnational political agendas seem to hinder the implementation of international and EU commitments even when their prescriptions have been enacted in national policy frameworks. Conflictual organizational interactions and reluctant responses from the target groups add to the difficulties faced during implementation by public policies and programs designed to halt environmental degradation.

The article has stressed some crucial negative consequences of decentralization confirming that it is not always only beneficial to the environmental performance of a state. The fragmentation of competences, the subnational discretion, and the room for policy capture are likely to increase in multi-level policy implementation. First, both cases confirm that the possibility of vertical clashes increases in the complexity of MLG, where competences are shared, distributed, and fragmented across multiple political-administrative levels (i.e., national, regional, and local). Second, the comparative analysis opens the study of implementation in MLG to issue prioritization and "the politics of attention" (Jones and Baumgartner 2005) at the subnational level. Political agendas set at the national and regional levels may differ in the way they prioritize information and policy issues. It follows that some national policy objectives may be contextually unachievable at the subnational level. Third, the presence of vested interests in both cases shows the risk of policy capture at the local level.

In other words, other political concerns outside the environmental policy domain seem to influence the subnational agendas in response to local interests. For instance, the need for stronger economic development and more employment may distort the political attention away from environmental concerns like biodiversity

loss toward demands from rentable economic sectors such as tourism or fisheries. These economic sectors have strong political influence on public decisions in coastal areas through their constituencies. These vested interests tend to oppose policy initiatives in favor of the coastal and marine environment. This opposition also makes enforcement quite difficult in regions with low resource availability. The same allocation of funds for the environment is negatively impacted by political agendas crowded with other socio-economic policy priorities.

In this context, several recommendations can be proposed. First, improving center–local administrative coordination in multi-level systems of governance through institutional arrangements and cultural predisposition for collaboration. Second, aligning national and subnational policy agendas by taking into account both international commitments for biodiversity conservation and local priorities of economic development. Third, strengthening public engagement, promoting balanced participation by involving a plurality of societal actors (not only the more powerful predominant sectors), and investing in a participatory culture around increased environmental awareness. Fourth, adopting regional strategies that enhance the political relevance of biodiversity conservation also as budget distribution in order to increase administrative capacity at the territorial level.

The coordination of diverging preferences and priorities and the engagement of a plurality of views, values, and interests in the formation of public decisions and the implementation of policy actions is relevant for any attempt to halt environmental degradation. Contemporary environmental challenges have in common high degree of complexity, uncertainty, and contestation. Like biodiversity loss, problems of pollution (including plastics), overexploitation of natural resources (e.g., fish stocks), and climate change are "wicked problems" (Klijn 2010). In these cases, the same definition of the policy problem as well as its possible solution brings along social conflicts and political disagreement often fed by insufficient and controversial scientific information. As shown in the article, clashes between competing interests and diverging values (e.g., economic development and social well-being versus environmental protection) are even more acute in contexts of scarce availability of resources.

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