

## Innovative Commons-Based Management for Madagascar's Protected Areas

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### Abstract

*Faced with the rapid degradation of ecosystems, the ecological emergency is now undeniable, according to global scientific analyses. In this context, protected areas, through shared governance, have emerged as one of the most effective strategies for preserving biodiversity and ultimately ensuring the survival of humanity. Madagascar, which has embraced this shared governance, relies on its local communities, the fokonolona, to ensure its effectiveness. However, these communities, living in precarious conditions, are heavily dependent on natural resources for their livelihoods and benefit little from the advantages of protected areas. Their adherence to the concept of protected areas remains to be determined. A field study revealed that while 52% support the concept of protected areas, 44% are not convinced. Nevertheless, since it is a state policy, all-natural resource users have accepted it. One of the primary motivations for the fokonolona is the preservation of their cultural and natural heritage. They, therefore, advocate for joint co-management that guarantees their participation in inclusive local governance for their engagement in the protected area. 93% of respondents believe that this co-management should be conducted through a commons-based approach, which is well-rooted in their organization. Even other users, in order to defend their interests, aspire to this approach where all users define the rules for resource management themselves. However, this commons-based approach does not seem suitable for all categories of protected areas, including natural parks, which is the option chosen by the manager for Sahamalaza – Iles Radama.*

### Keywords

Protected areas;  
commons; fokonolona;  
users; natural resources



## I. Introduction

As biodiversity loss increasingly threatens the planet, Protected Areas are now central to global conservation efforts. However, the results so far have been mixed. To better tackle this issue, the Rio Earth Summit in 1992 recommended shared governance, also known as co-management.

Protected areas play a crucial role in biodiversity conservation and ecological research in response to global biodiversity loss (Ramade, 2004). They offer invaluable opportunities to study the structure and functioning of ecosystems and biodiversity while serving as tools for ecological monitoring and the assessment of threatened species (Ramade, 2004). However, the traditional approach of separating conservation zones from production areas is being challenged. Lepart and Marty (2009) propose a gradient model that integrates strictly protected zones with agroecological spaces. In West Africa, protected areas were initially established for economic reasons but have since become vital for sustaining pastoral livestock systems (Kiéma, 2007). These areas host rare plant species and high-quality forage resources compared to peripheral zones. Although species richness is lower, protected areas maintain functional links with surrounding landscapes, influencing plant dispersal and composition (Kiéma, 2007). Striking a balance between conservation efforts and sustainable land-use practices is critical to preserving biodiversity both within and outside protected areas. Communication is the process of delivering messages by someone to other people to tell, change attitudes, opinions or behavior either directly orally or indirectly through the media. In this communication requires a reciprocal relationship between the delivery of messages and recipients namely communicators and communicants (Hasbullah, et al: 2018).

Shared governance generally refers to new approaches to managing biodiversity and natural resources in which various stakeholders, especially local communities, actively participate as partners. International organizations and NGOs have quickly supported this model. Borrini-Feyerabend et al. (2004) describe shared governance as: "Co-management, or 'shared governance,' involves decision-making power, leads to the sharing of that power, and has direct socio-economic impacts. It can challenge the sociocultural and economic values tied to how decisions are made, both within a community and across different social and administrative levels." This shared governance, which includes all actors, aligns well with the concept of the commons, an old idea brought back to life. Lionel Maurel defines commons simply as: "Resources collectively managed by a community under a governance system they establish themselves" (Maurel, 2020).

Since 2007, Madagascar has aligned itself with shared governance through its Madagascar Protected Areas System (SAPM). The SAPM outlines two forms of co-management: collaborative (or participatory) co-management and joint co-management. However, despite the involvement of civil society and local communities alongside the State and non-governmental organizations (NGOs), tangible results from effective and sustainable management have yet to be observed. Organization must have a goal to be achieved by the organizational members (Niati et al., 2021). The success of leadership is partly determined by the ability of leaders to develop their organizational culture. (Arif, 2019).

Pressures on biodiversity continue. This raises the question: How can we ensure appropriate and effective management of protected areas?

Thus, the overall objective of this article is to study and propose a management model tailored to the Malagasy context within the framework of shared governance. The specific objectives are as follows:

- Identify the challenges encountered in the current management of Protected Areas (AP);
- Determine the management approach that engages stakeholders, particularly the fokolonona, who play a crucial role in the framework of shared governance.

These objectives lead to the following research questions:

- What does the commons approach contribute to the concept of Protected Areas?
- Which management model effectively motivates stakeholders?

## II. Research Method

In response to this issue and these objectives, a study was conducted in two sites with shared governance Protected Areas (AP): Sahamalaza – Iles Radama is a Marine Protected Area (MPA) located in the northwest of Madagascar, covering an area of 24,106 hectares. This site includes the Sahamalaza peninsula and the four Radama islands, straddling five communes linked to two districts in the Sofia and DIANA regions. Officially established in 2007, it has adopted collaborative co-management. The second site, Sainte-Marie, is an MPA currently in development, situated on an island of 22,000 hectares in the eastern part of Madagascar. It serves as a commune, a district, and a prefecture within the Analanjirofo region. However, the future MPA will not encompass the entire island. Approximately 1,389.2 hectares are planned for the terrestrial zone, while 264,125 hectares are designated for the marine zone, bringing the total estimated area to 265,000 hectares. For its governance, it has opted for joint co-management and aims to implement it through a commons-based approach.

This field study was conducted using qualitative research methods, specifically through semi-structured interviews and participant observation. This qualitative approach aims to understand social phenomena through the lived experiences and perspectives of various stakeholders. Additionally, a quantitative study was carried out through individual surveys involving a sample of 298 people—249 from Sahamalaza – Iles Radama and 49 from Sainte-Marie—to validate the findings of the qualitative research.

### 2.1 Contextual Framework

SAPM has transformed the landscape of Protected Areas (AP) in the country, which now includes the APs of the Madagascar National Parks (MNP) network, along with new Protected Areas (NAP) that may have multiple co-managers, including the relevant governmental department. Among the significant innovations introduced by the SAPM in 2008 are the categories of AP and the types of governance. According to the IUCN, the SAPM now encompasses six categories of AP, of which four are particularly restricted in access, while two categories integrate conservation with development. The SAPM outlines four types of governance: delegated management, private management, community management, and especially co-management, which is the focus of this article. In practice, there is an implicit agreement between the MNP and other managers within the NAP. While the MNP focuses on categories of AP with very limited access, other managers, with few exceptions, focus on APs that balance conservation and development.

As previously mentioned, shared governance advocates for the essential involvement of indigenous populations or local communities. Particularly regarding local communities,

although they can sometimes be challenging to identify (Méral et al., 2008), Madagascar does not face this issue, as its fokonolona are clearly identifiable. The fokonolona can be defined as "a village community that is both human and spatial, based on cohabitation. Family ties at the village level often reinforce this geographical solidarity" (Bérard, 2011). However, it is important to note that the fokonolona are not the only human users of the natural resources within Protected Areas (AP). There are also non-residents, such as certain economic operators or illegal exploiters from other localities. Because these non-residents have divergent interests and often seek to gain control over natural resources, they frequently come into conflict with the Fokonolona.

The concept of the "commons," familiar to the Malagasy people, holds particular significance in the context of shared governance of Protected Areas (AP). It is based on the inclusivity of all users of natural resources. This idea of the "commons," which dates far back in human history, was revitalized when the American political scientist Elinor Ostrom was awarded the Nobel Prize in Economics in 2009 for her work on the management of common resources by real-world communities across the globe (Obadia Alain, 2017). In Madagascar, as early as the 9th century, under the reign of Andrianampoinimerina (1745–1810), the fokonolona held assemblies where they made collective decisions on civil, land, or resource management issues, such as rice paddies (Gaudieux & Ramiamanana, 2019). The deep-rooted connection between Malagasy communities and the notion of managing shared resources, making it a relevant model for modern governance approaches in APs. More concretely, a "commons" is composed of three inseparable elements forming the vertices of a triangle:

- A resource (material or immaterial);
- A community of users;
- Rules for accessing shared resources.

Aubert and al. (2017) emphasize that the commons approach is a conceptual framework based on the collective management and preservation of shared resources. Through the commons, the actors involved in communal living promote moral values, produce legal norms, and advocate for a model of social and ecological justice.

Local governance is a concept that was introduced to the Malagasy people previously. Historically, the fokonolona, to compensate for the shortcomings of the State, have relied on the "dina," which Andriamalala and Gardner (2010) define as: "Traditionally, the Dinas are social norms or codes of conduct that govern relations within or between communities. These are voluntary rules, developed and enforced by the community itself, usually in the form of oral tradition."

Moreover, Protected Areas can also serve as a tool for local development or grassroots development. For this article, we refer to the definition provided by the working group at the 2002 Montreal Summit: "Local development is a process through which the community participates in shaping its own environment with the aim of improving the quality of life for its residents. This approach requires a harmonious integration of economic, social, cultural, political, and environmental components". When this development is framed within a long-term perspective, it becomes sustainable local development.

#### **IV. Findings and Discussion**

There are many similarities between the two sites in this study. Both sites have several groups of users, including economic operators, households, small-scale fishers, farmers, and illegal exploiters of forest and marine products. The majority of these users are part of the fokonolona. A deep cultural connection and strong attachment of the natives to their

tanindrazana (ancestral land) are prominent in both locations. Another common feature is the need for decentralized state technical services on the ground. Technical services lead the fokonolona to organize themselves, both in community life and in the preservation of natural resources, through Dina or traditional practices.

#### **4.1 Well-known concepts among users**

##### **a. Concepts integrated into customary practices**

Even though the interests of the various user groups diverge, 97% of those surveyed affirm that sustainable local development, shared governance, and the commons are exactly what they aspire to. Moreover, the fokonolona from both sites confirmed that they have always applied these concepts in their community life. In fact, the absence of the State on the ground has often forced them to take initiatives that align with these three concepts. Many examples were cited, including the construction of community schools and the coverage of salaries for FRAM teachers (Fikambanan'ny Ray aman-drenin'ny Mpianatra, or Parents' Associations), the Transfer of Natural Resource Management (TGRN), the building of footbridges, the creation of forest trails to prevent damage to vegetation by users, as well as the informal management of forests or marine territories, the management of watercourses, and more.

##### **b. Sustainable local development: a shared objective amidst divergent viewpoints**

Resource users unanimously share concerns about sustainable local development. Economic operators even claim that, although the fokonolona may not be aware of it, they act in alignment with sustainable local development. However, opinions differ on whether all actors are genuinely concerned about the sustainable development of the sites in question. Each side blames the other for the issues hindering sustainable development in both locations.

91% of respondents, mostly from the fokonolona, believe that it is the economic operators who focus solely on their profits that hinder sustainable local development. The fokonolona criticize them, as well as NGOs, for not valuing local skills in their recruitment processes. This contributes to the rural exodus of youth, particularly the brain drain of local talent. Moreover, these economic operators refrain from participating in reforestation efforts despite nature tourism generating a significant portion of their revenue. It is also rare for them to contribute to infrastructure projects, even though they have the means to do so.

On the other hand, economic operators, who make up 4% of the respondents, argue that sustainable local development is an illusion as long as harmful practices by the fokonolona, such as slash-and-burn agriculture, deforestation, fishing with mosquito nets, using mining bars to dislodge fish and crustaceans, charcoal production, and selective logging, persist. In response to the comments made by economic operators, locals from both sites assert that it is not all members of the fokonolona but rather migrants seeking farmland and illegal exploiters, who, due to their pressures, are the real culprits behind environmental degradation. This degradation negatively impacts tourism and ecotourism, which could otherwise boost local development. They argue that it is unlikely that locals, who have their plots of land, would destroy their tanindrazana (homeland).

##### **c. The Protected Area: A Non-Shared Conservation Strategy**

However, the establishment of a Protected Area (PA) does not enjoy unanimous support among users. While the majority of interviewees in the semi-structured interviews endorsed the PA, the results from the individual survey tell a different story. 52% of

respondents acknowledge the rationale behind a PA, 44% are unconvinced, and 4% chose not to answer the question.

52% of respondents are aware that, although the PA disrupts household consumption for those heavily reliant on natural resources and negatively affects economic activities and household budgets due to access restrictions, it is still considered a necessary evil. Two main reasons motivate their stance. Firstly, the PA ensures the preservation of their natural and cultural heritage, specifically marine and forest ecosystems, which they wish to pass on to future generations, just as their parents did for them. Secondly, they believe that the PA is the safest means to guarantee the development of their respective tanindrazana: the ecosystems are their only assets that attract development project promoters and tourists. Thus, it is in their best interest, from a development perspective, to preserve these resources. The 44% who are unconvinced mainly consist of disappointed villagers from Sahamalaza-Iles Radama, some migrants, and economic operators from both sites. These economic operators argue that the PA is not the best solution for conserving biodiversity and that the real problem lies with the State, which is absent on the ground. However, since the PAs are a state policy, they have resigned themselves from accepting them.

#### **d. Shared Governance: Membership Dependent on Its Structure**

A misunderstanding that the fokonolona of Sahamalaza–Iles Radama claims to have fallen victim to is the concept of shared governance. In the SAPM, shared governance actually manifests in two forms:

- Collaborative or participatory management, which requires the delegating party to consult all stakeholders appropriately;
- Joint management involves stakeholders in the decision-making process as the delegated managers of the Protected Area (COAP, MEEFT, 2008).

By joining the Protected Area, the fokonolona of Sahamalaza – Iles Radama envisioned joint management, which aligns much more closely with the shared governance concept as interpreted by Borrini-Feyerabend and al. (2010): "In a mode of 'shared governance,' different partners negotiate, define, and guarantee the sharing of functions, rights, and responsibilities regarding the relevant marine and coastal zone and its natural resources."

Thus, it was a complete disillusionment in Sahamalaza – Iles Radama when the Madagascar National Parks (MNP) announced and explained, during the official establishment of the PA, that the governance would be collaborative management. As a result of this disenchantment, the fokonolona of Sahamalaza–Iles Radama became largely disinterested in the management of the AP for a long time. During the survey, 66% of them expressed that they felt manipulated and did not identify with this PA.

#### **4.2 The commons: a resource embraced by most users**

93% of the respondents believe that the commons approach is the most suitable for resource management policies in general and for managing a Protected Area in particular. They argue that it is legitimate for users to set the rules that enable sustainable resource management to establish social and environmental justice. For a long time, they lamented that it had been an elite group concentrated around those in power and economic operators who had control over the resources. What infuriates them is that the State, supported by NGOs, restricts their access to resources and imposes severe penalties for violations. In contrast, exploitation permits are easily granted to economic operators, while certain individuals, often connected to those in power, act with impunity in the trafficking of endemic species or occupy forested lands only to sell them later.

### **a. The commons: a strong foundation among the fokonolona of both sites, but...**

79 % of respondents have attended at least two or three meetings related to the commons. They mentioned that attendance at these meetings largely depends on the agenda items. One meeting that everyone attended focused on the development of a dina. Apart from this, respondents from Sahamalaza – Iles Radama referred to various meetings, such as those related to the FRAM (Parents' Associations), discussions about using a village watercourse, and meetings concerning a sacred site. They also highlighted a series of public consultations regarding the delineation of the Protected Area (PA) and its zoning units, as well as the Social and Environmental Safeguard Plan (PSSE). As for the residents of Sainte-Marie, nearly all participated in various meetings at their respective villages regarding community development sub-projects and organizational meetings aimed at preserving their natural resources. However, one of their proudest achievements was their direct involvement in developing the Master Planning Scheme (SGA) for their future PA.

### **b. user inclusivity questioned by the Fokonolona.**

A long history of coexistence has led the natives of Sahamalaza – Iles Radama and those of Sainte-Marie to exhibit what Emile Durkheim refers to as mechanical solidarity. This mechanical solidarity means that not all but some of our interlocutors seem inclined to exclude certain economic operators and a few migrants from management, believing they are only there to deplete the resources. Furthermore, they do not recognize the legitimacy of non-residents, such as illegal exploiters or certain artisanal fishing companies, who they see as only present for short-term gains.

92% of those surveyed believe that the users who determine management rules should be limited to the fokonolona, particularly the natives. For them, natural resources are a matter of survival. Thus, they feel it is fair and more legitimate for them to be the sole creators of management rules to ensure resource viability. They argue that other users are primarily motivated by interests that conflict with the long-term sustainability goals of natural resources. Once the resources are exhausted, these users will leave. In their exploitation, they are unaware of a shared destiny for a better future, which necessitates rational and sustainable resource use. These villagers are also reluctant to involve state agents, as those who can be corrupted become complicit with economic operators and illegal exploiters.

### **c. Some cases of applying the commons approach.**

Participant observation in both sites allowed us to experience some practical examples of the commons approach. For instance, in Andimaka, a Fokontany in the Commune of Amboloboza, part of the Sahamalaza – Iles Radama site, an urgent meeting was held one evening in June 2021 at the request of the villagers, convened by the Chief Fokontany. Since the issue also affected the nearby village of Ampanittoa, he sent about ten representatives. The matter at hand involved a migrant farmer from Andimaka who had diverted the path of a stream to irrigate his field, thereby reducing the stream's flow. The discussion led to the establishment of new rules, prohibiting anyone from diverting any part of a watercourse or existing path used by the fokonolona, regardless of the reason.

Another experience, from August to December 2023, focused on the development of the Global Land Use Scheme (SGA) and the management rules for the future protected area of Sainte-Marie.

The process unfolded in five stages:

- A workshop was held in each of the four districts of Sainte-Marie (each district comprises four to five Fokontany).

- A general assembly will be held to validate the results of the district workshops at each Fokontany level.
- This is a compilation effort by the promoting NGO to consolidate the zoning units and management rules approved by the assemblies of the seventeen Fokontany.
- A four-day scientific and regional workshop that brought together representatives from various ministries involved with the protected area, local and regional authorities, decentralized state technical services in Sainte-Marie, national and regional scientists, representatives from each fokonolona of the seventeen Fokontany, local NGOs and associations, and representatives of local economic operators.
- A public consultation on the workshop resolutions within the fokonolona of the seventeen Fokontany of the island.

## **Discussion**

The primary goal assigned to protected areas (PAs) is the conservation of biodiversity, natural resources, and cultural resources associated with biodiversity. However, in the case of Madagascar's PAs, this significant objective is still far from being achieved. Aside from budgetary issues, the issue primarily revolves around appropriation and organization.

### **4.3 The challenges of conservation in Madagascar.**

The protected area strategy in Madagascar faces numerous obstacles in reconciling conservation with the needs of local communities. The creation of these protected zones frequently leads to tensions with rural populations dependent on forest resources for their livelihoods (Weber, 1995) ; (Aubert and al., 2013). Although efforts have been made to expand these areas, the lack of adequate consultation with local communities could result in increased deforestation and the creation of "paper parks." The current approach risks generating situations of unrestricted access, undermining conservation objectives (Weber, 1995). Land insecurity surrounding these areas hinders both biodiversity preservation and rural development (Aubert et al., 2013). Introduced in the 1990s, community-based natural resource management aimed to involve local populations in the governance of resources (Bertrand et al., 2009). However, Madagascar still struggles to harmonize conservation, sustainable management, and poverty reduction, highlighting the need for a clear political choice between strict protection and sustainable local development (Bertrand et al., 2009).

### **4.4 A rejection of the management mode based solely on consultation with the fokonolona.**

Users of natural resources assert that protected areas play a crucial role in conserving natural ecosystems. However, they express concern over their exclusion from the management of these areas. They believe that co-management should involve genuine participation and accountability in governance, rather than merely serving as a form of consultation.

#### **a. A reluctance toward collaborative co-management.**

Users from both sites assert that they have been adequately sensitized through awareness campaigns during the process of establishing a Protected Area (PA). They understand that the focus is not merely on managing a physical space but rather on managing resources, particularly the usage of these resources through regulation of user activities. This understanding motivates their desire for shared governance. They believe that their

involvement in governance is the most effective way to prevent the tragedy of the commons and to preserve their natural and cultural heritage.

However, they acknowledge that this is challenging in a context like Madagascar, characterized by a culture of impunity, corruption, and interventionism. Collaborative co-management needs to address these issues effectively. While regulations require the delegate to consult all stakeholders, the reality often differs. Additionally, the delegate can be easily swayed by elites close to the government in their decision-making process.

This reluctance toward collaborative co-management, as illuminated by field research, is a current challenge in managing Protected Areas (PAs). This hesitation results in a lack of engagement from users, particularly the fokonolona, in achieving the objectives of these PAs. The rejection of collaborative co-management by users is understandable given the current situation in Sahamalaza – Iles Radama. While users may be consulted on micro-projects to be implemented in the area, they are not involved in the management of the PA itself. Moreover, the Madagascar National Parks (MNP) does not always consider the sociocultural and economic realities of the site or the organizational aspects that have proven effective; as Ragab (2022) notes, protected areas primarily represent categories of territorial rights that can alter previous territorial practices without completely erasing them. In reality, the reluctance toward consultative management is not surprising, as consultations often serve as a facade to create the illusion of participation in decision-making. A clear illustration of this can be seen with certain Dina, particularly those related to the Transfers of Management of Natural Resources (TGRN). Although Dina are customary rules, they are often crafted by NGOs or technicians who lack a true understanding of the local realities pertinent to the TGRN being implemented, yet they tend to believe they possess all the necessary knowledge. Consequently, Dina has sometimes been imposed by external agencies with motivations that differ from those of the local managing communities (Antona & Gardner, 2010). Additionally, NGOs may introduce elements to influence the content of Dina in accordance with their own objectives (Bérard, 2006).

### **b. A Motivation for Joint Co-Management**

By advocating for shared governance, the resource users and the fokonolona are explicitly demanding joint co-management. The fokonolona emphasized that the forest, mangroves, and the sea provide everything they need for survival. However, in recent times, they face a pressing concern: the struggle to survive, which has become increasingly difficult due to the degradation of resources primarily caused by the activities of various operators and well-equipped clandestine exploiters. To better preserve these valuable resources through a protected area, they seek joint co-management, applying the commons approach, where they can be actively involved and hold responsibility as full partners in the management process.

Particularly in the case of Sahamalaza – Iles Radama, a decade after the official designation of the protected area, the fokonolona has come to acknowledge some positive results in the management by Madagascar National Parks (MNP). However, they continue to express dissatisfaction that MNP, which already lacks sufficient resources, remains disconnected from the realities of the area. They regret that MNP rarely consults them on the management of the PAs, despite their local knowledge and expertise, which could significantly improve the conservation efforts. Unfortunately, in Madagascar, based on past experiences, it seems that joint co-management is not yet prioritized by the government or the NGOs promoting PAs. Among the 123 PAs in Madagascar, none have adopted joint co-management. Instead, all are either solely managed by the responsible Ministry or its delegates, or through collaborative co-management (MEDD, 2023). This indicates a general

lack of trust in the users by both the State and NGOs. However, as noted by Borrini-Feyerabend et al. (2010), shared governance evolves through a process of negotiation and learning by doing, eventually leading to the creation of new institutional arrangements.

### **c. An Innovative Co-management Model through the Commons Approach**

The sustainability of biodiversity and natural resources requires solid organizational frameworks. In the context of a protected area, this means establishing an equitable management regime that simultaneously considers the interests of various resource users, the conservation of biodiversity, and the protection of sociocultural and economic values. Achieving conservation objectives also necessitates valuing traditional and empirical knowledge equally with technical and scientific expertise. An equitable management regime stands a better chance of success through a joint co-management approach, where all stakeholders participate in decision-making collectively. For its implementation, the commons approach is the most suitable. This innovative approach, particularly within a PA, has the advantage of establishing self-governance where stakeholders, including resource users, promote adaptive management that does not compromise the sustainability of biodiversity and natural resources. While it may not be guaranteed that governance through the commons will succeed right from the start, or in every instance, shared governance involves a process of negotiation and learning by doing, as emphasized by Borrini-Feyerabend and al. This idea is echoed by Aubert and Botta (2017), who note that social learning is a driving force behind adaptive co-management, particularly within the commons framework. In other words, shared governance, through the learning process in a "working together" culture, recognizes the right to make mistakes and the right to experiment. After all, success is often built on trial and error.

The fokonolona are not only highly motivated but also have proven experience with managing commons, which they have consistently applied in the governance of their community life. They are convinced that they are best positioned to determine what is necessary to ensure the sustainability of their natural and cultural heritage. According to them, one of the greatest merits of a protected area is that it is a tool recognized by the central government for preserving biodiversity and natural resources against external intrusion and exploitation. As co-managers, through a commons-based approach, they can play a more effective role in protecting and managing these resources.

### **4.5 The Commons for Better Biodiversity Conservation**

As mentioned earlier, the concept of the commons is familiar to the Malagasy people. It is an approach embraced by the entire population of the island, both in urban and rural areas. Community-based conservation strategies have demonstrated promising results in Madagascar's efforts to protect its unique biodiversity. The transfer of natural resource management to local communities, coupled with ecotourism, training of para-scientists, and environmental education, has led to the establishment of community-managed reserves and ecological monitoring programs. This approach builds upon Madagascar's historical roots in local resource management, which were disrupted by colonial policies but have been reestablished through the 1996 law on the local management of renewable resources (Bertrand and al., 2009). However, challenges remain, including human pressures on protected areas (Weber, 1995) and the need to balance conservation with poverty reduction (Bertrand et al., 2009). Madagascar's exceptional biodiversity, with 80% of its flora and fauna being endemic, is threatened by rapid population growth and poverty (Goedefroit, 2002). The

country must make clear political choices between preservation and sustainable community management to effectively address these challenges (Bertrand et al., 2009).

### **a. Essential Conditions for the Effective Implementation of the Commons Approach**

The commons approach presents a promising framework for tackling contemporary ecological and social challenges. It offers a middle ground between public and private management, aiming for improved resource governance and a more equitable society (Eynaud et al., 2024). Central to this approach is collective action, which drives both diagnosis and solution-finding, fostering the emergence of institutional arrangements that engage communities in addressing local issues (Aubert et al., 2017). The commons challenge fundamental legal concepts, such as ownership and accountability, by emphasizing access, community involvement, and the assertion of a shared vision (Misonne et al., 2018). Concrete initiatives, like the Campus de la Transition, seek to establish conditions for common justice by balancing universal obligations with the collaborative efforts required to nurture both individual and collective virtues across diverse cultures (Renouard, 2020).

The commons approach posits that achieving social and ecological justice should be the primary motivation and ultimate goal of all activities, even in uncertain contexts (Aubert et al., 2013). However, its implementation is only sometimes straightforward, as it requires conditions that may not align with the expectations of various users.

#### Communication

Effective communication is a crucial prerequisite for the process. Users must be well informed. The commons approach, in particular, relies on the generation of relevant, reliable, accurate, accessible, and understandable information for users, as such information is critical for their timely engagement in the development or updating of rules. Respondents highlighted this necessity, noting that attendance at meetings primarily depends on the clarity of the agenda items.

Efficient communication plays a vital role in information management and participatory processes within organizations and communities. Sutter (1997) emphasizes the importance of proactively disseminating information and facilitating engagement that is tailored to the users' needs and cultural context. In the realm of sustainable development, Déprez (2014) points out the rise of a participatory culture in territorial planning, which requires an evolution in territorial practices. Peyrelong (2005) focuses on the significance of documents in the informational processes of organizations and their connections to new management approaches. To address the challenges of initial engagement in information filtering systems, Nguyen et al. (2014) suggest leveraging "coldly available" data to enhance initial recommendations for new users. Collectively, these studies underscore the importance of user-centered approaches, the need for reliable and accessible information, and innovative techniques to enhance communication and participation across various contexts, from organizational settings to territorial development initiatives.

#### Resource Management Focus

Another important condition pertains to the resource itself. As Jacques Weber (Lavigne Delville et al., 2022) points out, "A resource exists only to the extent that it is subject to use. It is the act of human utilization that transforms a natural element into a resource." However, within the commons framework, more than just any resource qualifies. First and foremost, as demonstrated by Elinor Ostrom, a resource must not only exist but also be capable of supporting usage (Association EcoRev', 2012).

Additionally, this resource must be shared among users. This sharing necessitates social inclusion, even concerning newcomers. Consequently, this implies the need to update access conditions, which typically involves evaluating and determining the resources to be shared.

Moreover, a shared resource is determined by its allocation rather than its nature or ownership regime. For instance, a resource located on private property can be designated for communal use with the owner's consent. This is evident in certain traditional grazing lands used by various clans or communities in southern Madagascar, where members allow others to utilize these lands during transhumance periods. Another example provided by Antona (Villarroel et al., 2021) highlights that "the commons encompass various forms of appropriation and types of rights (referred to as 'bundles of rights' in the literature). For example, while the land of a forest may belong to a single owner, different uses of the chestnut grove (such as for gathering or grazing) can be shared according to collectively decided rules, thereby transforming this chestnut grove into a common resource."

#### □ The users of the resource

Commons also refer to the users. As noted by Aubert and al. (2017), commons woven around land and its resources reflect social and ecological solidarities that need to be nurtured, sustained, and strengthened. Indeed, commons represent what we collectively care for. Consequently, users are expected to act in solidarity, working together towards a desirable future shared by all, fostering an awareness of a "common destiny." Users encompass not only humans but also non-humans (animals, plants) that share their spaces and resources.

Additionally, in Madagascar, ancestral spirits are believed to inhabit sacred sites or manifest in animals and trees, making them sacred as well. Humans and non-humans living in interdependence within the same space for a given time are interconnected through a vast web of interactions. Ecological solidarity thus emerges as a moral bond between humans (individuals, social groups) and non-humans (Aubert et al., 2019).

#### □ The Governance Rules

Another condition for the commons pertains to governance rules, which rely on a collective approach involving all users. Elinor Ostrom defines rules as "shared understandings among actors regarding effective prescriptions that define which actions or outcomes are required, prohibited, or permitted" (Weinstein, 2013). All users must participate in the rule-making process within what Elinor Ostrom refers to as arenas for effective "common" management, which she describes as the "bundle of rights" (Villarroel A., Riegel J., Guihéneuf P-Y., 2021). This collective approach, grounded in mutual trust as much as possible, fosters the exchange and sharing of perspectives, leading to shared access rules, an effective sanction system respected by all, and the establishment of a conflict management mechanism along with procedures for revision or updating in case of potential dysfunctions that could undermine social and ecological solidarities. Furthermore, this collective process helps balance power dynamics and identifies behavioral rules that may evolve based on changing realities.

### **b. The Boundaries of the Commons: Ensuring the Integrity of a Protected Area**

The initiative to expand protected areas in Madagascar aims to triple conservation zones to cover 10% of the national territory, highlighting the complex interplay between conservation objectives and local realities. While intended to safeguard biodiversity, this approach often leads to conflicts with the needs of local communities and their traditional land-use practices (Scales, 2014). The establishment of protected areas can result in a de facto

open access situation, necessitating extremely costly control measures (Weber, 1995). To address this, some advocate for granting exclusive usage rights to local communities within negotiated management plans (Weber, 1995). Others propose recognizing the legitimate rights of local populations over state-owned forested areas, contingent upon the maintenance of ecosystem services (Aubert et al., 2013). However, the process of designating new protected areas has been criticized for its limited consultation with rural populations, potentially exacerbating land insecurity and even accelerating deforestation (Scales, 2014). These challenges underscore the need to rethink the protected areas model and its implications for the relationship between society and the environment (Amelot & André-Lamat, 2009).

Commons present specific challenges in the management of protected areas.

#### □ The Scale Challenge

The first limitation is the issue of scale. Elinor Ostrom herself noted that common management is more likely to succeed with smaller resources and at smaller scales, where users know and can visualize each other. She later nuanced this perspective, suggesting that success primarily depends on the homogeneity of the group sharing the resource (Antona M., Bousquet F., 2017).

Nonetheless, the question of scale is particularly relevant to protected areas, especially in Madagascar, where these areas often span thousands of hectares. For instance, the Sahamalaza – Iles Radama protected area encompasses 24,106 hectares, with users dispersed across more than thirty Fokontany (administrative divisions) belonging to five communes, which are part of two different districts and ultimately fall within two provinces. Thus, the issue of scale is critical because the commons approach relies on the solidarity and collective action capacities of users to create rules that are shared and respected by all.

However, some experiences in Madagascar suggest that effective management of large-scale resources is not romantic. For example, the management of security through the Dina Etsy mi poly, also known as Dinan'i Foara, once involved an entire administrative region, Melaky.

Indeed, the core issue here revolves around organization. It's important to remember that in the past, governance of protected areas (PAs) in Madagascar was monopolized by a single entity. Nonetheless, this organization managed to preserve the biodiversity and natural resources within these areas to some extent. Since 2007, shared governance has been implemented, currently in the form of collaborative co-management, with various NGOs acting as both promoters and co-managers. The results are significantly better than those seen under monopolistic governance.

Notable large-scale PAs include the Mahavavy Kinkony Wetland Complex, spanning 302,000 hectares in the Boeny Region; the Mangoky Ihotry Wetland Complex, covering 426,146 hectares in the Menabe Region, and the Ankeniheny Zahamena Corridor, which encompasses 369,266 hectares in the Alaotra-Mangoro Region (see MEDD, 2023). While these PAs are not technically considered commons, as they operate under a participatory co-management model where users are merely consulted, this collaborative co-management could serve as a stepping stone towards joint co-management. Transitioning from collaborative to joint co-management requires just a small leap, provided that NGOs extend more trust to the other users.

#### □ Challenges in Reconciling Divergent Interests

One key aspect is that a protected area, as a major tool for achieving biodiversity conservation, relies on a crucial factor: the people who utilize it. In this regard, Jacques Weber's remark is particularly poignant: "Humans are an integral part of the ecosystem we

aim to preserve; we will not succeed without them" (Compagnon & Constantin, 2000). The experiences from the Sahamalaza-Iles Radama and Sainte-Marie sites underscore that collective action among users needs to be more straightforward. A culture of collaboration, as articulated by Bollier and Helfrich (2022), needs to be more present and appear somewhat illusory. Each group tends to defend its interests, often in conflict with those of others: economic operators seek maximum profit and resist limitations on their exploitation.

Meanwhile, migrants striving for a better life extract resources as quickly and abundantly as possible. In contrast, local inhabitants aim to limit their exploitation to preserve their heritage and provide for future generations. These groups need to recognize the concept of shared resources and that it would be more rational for a desirable future to collaboratively establish rules that ensure resource sustainability.

In such a scenario, one might wonder if, in the absence of collective ownership, it would be more reasonable to exclude individuals or groups that do not align with the collective interest. Furthermore, Villarroel, Riegel, and Guihéneuf (2021) have reported instances where community-established management rules excluded certain users, particularly in cases involving resources subject to significant seasonal variability (such as fisheries) or where knowledge of the resource limits is lacking (as seen with aquifers).

#### □ Categories of Protected Areas Unsuitable for Commons Involving Fokonolona

As mentioned earlier, three inseparable elements constitute the commons: the resource, the users of that resource, and the governance rules established by the users. However, upon analysis, certain categories of Protected Areas (PAs) within the SAPM need to align fully with these conditions. Among the six categories of PAs in the SAPM, Categories V (Protected Landscape) and VI (Natural Resource Reserve), which integrate conservation and development, are well-suited for the commons. To a lesser extent, Category IV (Special Reserve), where local economic activities are permitted as long as they align with the management objectives set within the Special Reserve, is also compatible with conservation and habitat protection goals.

In contrast, the remaining three categories need to be more adaptable. For instance, Category I (Strict Nature Reserve) is designed for pure conservation, allowing only scientific research and very specific cultural rites. This strict PA requires highly technical rules that users may find difficult to navigate.

Two additional categories of Protected Areas (PAs), namely Category II (Natural Park), designated for the protection of important ecosystems and recreational and educational purposes, and Category III (Natural Monument), primarily managed to preserve a specific natural or natural/cultural feature, also have very limited access. In general, permissible uses are restricted to exercising usage rights, engaging in ecotourism activities, and allowing human settlements that predate the temporary protection order. Theoretically, these two categories are less prone to conflicts since any commercial exploitation is prohibited, thus excluding economic operators, except for tourism professionals, from user groups. However, there is a significant risk of disagreement between the delegated manager and the fokonolona. The fokonolona, who have historically relied on natural resources, are unlikely to limit themselves to mere usage rights, which may hinder their involvement in governance and lead to dysfunctions. Another risk pertains to the power dynamics among users, particularly between tourism operators and the fokonolona. Economically stronger tourism operators may attempt to impose their rules on others. Given that tourism/ecotourism is a major source of income within the context of a PA, these operators could easily influence and manipulate both direct and indirect beneficiaries of this sector. Therefore, it would be more prudent for a higher authority recognized by all to make decisions in these four categories of PAs.

## V. Conclusion

The mode of management is undoubtedly one of the key conditions for the success of a Protected Area. In Madagascar, both state management and collaborative co-management approaches have been implemented over time. However, these management styles have yet to achieve convincing results. A crucial parameter is lacking in both cases: the appropriation of PAs by the fokonolona.

This lack of appropriation, particularly evident among the fokonolona of Sahamalaza – Iles Radama, leads them to disengage from the objectives of the PAs and to reject the management rules with which they do not identify. This absence of commitment, in turn, negatively impacts the effective management of the PAs. Yet, the fokonolona have expressed that they are deeply concerned about the preservation of their cultural and natural heritage, which gives their tanindrazana (homeland) invaluable significance. Consequently, they are highly motivated by co-management models that position them as co-decision-makers alongside other stakeholders, including other users. This joint co-management, which they advocate for through a commons-based approach, allows them to fully defend their sociocultural and economic values in the management of PAs.

However, upon closer examination, not all categories of PAs lend themselves well to the commons involving the fokonolona. Indeed, achieving their respective objectives relies on a single, higher authority recognized by all, capable of regulating the very limited access to these categories of PAs.

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