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PARADIGMS OF MADAGASCAR'S FOREST POLICY IN 1997 AND 2017 AND THEIR FINANCING MECHANISMS

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ABSTRACT

Forest Policy in Madagascar is often discussed in relation to broader environmental concerns. The Malagasy government has taken several steps to address the loss of natural forest cover, including the adoption of various laws and regulations. This article examines the paradigm shifts in Madagascar's Forest Policy in order to better understand the changes related to forest financing mechanisms. It aims to explain and compare the evolution of Forest Policy in the country. Throughout the article, the two official documents recognized as Madagascar's "Forest Policy" have been analyzed to identify the two main paradigms. Subsequently, legislative and regulatory documents regarding these policies were systematically mapped to identify the supporting measures. Finally, semi-structured interviews were conducted with key ministry officials to ascertain their understanding of the Forest Policy and the financing mechanisms currently in place. The results showed that the two major shifts in Forest Policy are marked by the 1997 and 2017 Forest Policies, each accompanied by supporting measures that include various forest financing mechanisms. However, the implementation of the Forest Policy faces several challenges related to both its content and its interpretation by stakeholders in the forestry sector.

KEYWORDS: Forest Policy, paradigm, financing mechanism, forestry sector

INTRODUCTION

The decline of forest cover is a major socio-economic and environmental concern worldwide. In Madagascar, forests are a vital resource supporting the survival of the population; however, they are

experiencing gradual degradation. Finding solutions is therefore imperative, and adaptation is essential [1]. To adapt to this situation, the Malagasy government has put in place several initiatives. These include policies, laws and regulations, action plans, strategies, and other tools to manage forest-related activities. Among these initiatives, the Malagasy Forest Policy was notably updated twice, in 1997 and 2017. These updates can be seen as a process of adjusting to real or expected changes in the environment. The goal is to reduce harm or take advantage of new opportunities. Policy adaptation is multidimensional and dynamic. It carries many risks across several sectors [2]. Therefore, it is essential to undertake a thorough framing of these policies, as this provides a contextual understanding of the situation, its characteristics, the choices made, and the actions implemented to address different challenges. In public policy theory, framing helps explain how actors think and act in complex situations. To build this framing, it is important to identify the political paradigms involved. These paradigms explain the main ideas and dominant actors. The concept of a political paradigm refers to a dominant worldview. It is often seen as a set of accepted beliefs about political goals, the nature of political problems, and the tools used to solve them [3]. In the 18th century, the forest management paradigm emerged in Japan and Germany [4]. Later, between the 1950s and 1980s, North American countries adopted a forest management approach focused on the sustainable use of commercially valuable species [5]. From 1970 to 1990, the paradigm of sustainable forest management based on ecosystem management gained momentum worldwide [4]. During this period, tropical forest management also emerged, accompanied by the establishment of numerous forest policies [6]. From 1990 to the mid-2000s, the paradigm primarily emphasized sustainable forest management tailored to regional context and specificities, before shifting towards a more global ecosystem-based approach to sustainable forest management [7]. Changes in these paradigms guide stakeholders in their choices and initiatives across various domains, such as fields of intervention, tools, and instruments. Consequently, these paradigm shifts lead to further changes, including the mechanisms for financing forests [8]. In the case of Madagascar, these paradigm shifts have been present and reflected in the forestry sector [9]. However, although evident in official documents, these changes are not explicitly stated and become obscured within a large body of legislative and regulatory texts, limiting the understanding of forest policies. Therefore, the main objective of this article is to clarify the major changes in Madagascar's Forest Policy in order to thoroughly examine the measures taken, particularly regarding forest financing. Accordingly, this article aims to address two questions:

- (i) What are the major paradigm shifts and the texts related to Madagascar's Forest Policy?
- (ii) How have these paradigm shifts influenced forest financing mechanisms?

To address these questions, the two official documents on Madagascar's Forest Policy were analyzed using thematic analysis to extract the main paradigm. Then, a thematic analysis of the regulatory and legislative texts corresponding to each Forest Policy was conducted to identify the accompanying measures that influenced the primary Forest Policy. Finally, semi-structured interviews were carried out with officials from the relevant ministries to assess their understanding of the impact of these Forest Policy

changes and their effect on forest funding mechanisms.

MATERIALS AND METHODS

This article aims to identify the major and minor paradigm shifts in Madagascar's Forest Policy of 1997 and 2017. To this end, a thematic analysis of the two forest policies was conducted to extract the major paradigm changes. To analyze the accompanying measures, a thematic analysis of the legislative and regulatory texts was undertaken. Finally, semi-structured interviews with ministry stakeholders were carried out to assess their alignment with these paradigm shifts, as well as their understanding of the existing financing mechanisms.

1. Theoretical Framework

The conceptual framework used in this article is inspired by Hall's work on political paradigms, which he defines as *"a framework of ideas and standards that determines not only the objectives of a policy and the instruments to be used to achieve them, but also the nature of the problems they are meant to address"* [10]. Indeed, political paradigms greatly influence the formulation of the goals and objectives of each policy, the choice of instruments, and determine actors' preferences regarding how the policy is implemented. To analyze these paradigms shifts within the context of Madagascar's Forest Policy, we adopt the approach of Vij et al., which focuses on predominant ideas, the determination of policy goals, and their implications. Using this approach, Vij et al. employs indicators such as the policy framework, objectives, sectors considered, and instruments [11]. The framework refers to how actors interpret the problem and propose solutions. The policy objective relates to the main goal of the policy and indicates its integration within the overall governance system. The targeted sector refers to the different areas of public policy that have clear goals and can help respond to major changes in the way policies are designed. Finally, the instruments are the resources at the government's disposal to intervene and implement the policy, which can take various forms (organizational, regulatory, and financial). To better understand these paradigms shifts, it is essential to consider both the drivers and the modes of change. Indeed, political paradigms may evolve either through abrupt transformations or gradual adjustments, under the influence of various factors—both exogenous and endogenous [12].

2. Data Collection Methods

As part of this study, data collection was conducted in two main phases: the review of legislative and regulatory texts, and the conduction of semi-structured interviews. For the legislative and regulatory review, relevant documents were identified through a targeted search within the FAOLEX database, specifically under the country profile for Madagascar and the "forestry" section. In the first phase, all legislative and regulatory texts published between 1990 and 2025 were collected. Each document was

systematically examined, and only those containing direct references to the following themes were retained for analysis: “policy,” “forest,” “Forest Policy,” “forest management,” “biodiversity,” “local community,” “tourism,” names of specific forest domains, “financing,” “financing mechanisms,” “reforestation,” “forest exploitation,” “forest administration,” “REDD+,” “vegetation fires,” or “protected areas.” The selected texts were then integrated into a Zotero library to facilitate their management and analysis. During the review of documents from the FAOLEX database, any reference to texts not available on the platform prompted a direct search and retrieval from the databases of the relevant institutions. In cases where legislative and regulatory texts alone do not adequately reflect the evolution of Forest Policy, strategic documents and consultant reports are used as complementary sources to deepen the analysis.

For the semi-structured interviews, a questionnaire was initially developed based on existing knowledge to assess ministry stakeholders’ understanding of the paradigms and their shifts. A specific section focused on financing mechanisms was also included. To conduct these interviews, a limited number of participants were identified at the outset, and during the interviews, previous respondents referred the interviewer to other relevant individuals who were subsequently interviewed as well. Participants gave their consent to take part and were given the choice to be recorded or not. Those who agreed to recording provided oral consent at the start of the recording, which was then transcribed. For participants who declined recording, the interviewer took detailed notes.

3. Data Analysis Methods

The analysis of legislative and regulatory texts was conducted in two stages. The first stage involved an inductive thematic analysis of the two Malagasy Forest Policy documents. At the end of this analysis, a primary paradigm emerged from the documents. The remaining legislative and regulatory texts were initially categorized by sector, then subjected to an inductive thematic analysis, and subsequently compared with the inductive thematic analysis of the two Forest Policies of 1997 and 2017. Through these analyses, particular attention will be given to financing mechanisms. In the case of the semi-structured interviews, an inductive thematic analysis will also be conducted to identify the main themes. Inductive thematic content analysis is a data analysis method that allows key themes to emerge during the analysis process [13]. This method is applied throughout this study. First, the two Malagasy forest policies will be analyzed using this approach, followed by the regulatory and legislative texts related to these policies, and finally the semi-structured interviews. Specific steps were followed to carry out these inductive thematic analyses [14]. Initially, a familiarization with the data was conducted. This involved reading the documents (policy texts, legislative or regulatory texts, interview transcripts, or notes) multiple times to grasp their overall meaning. Subsequently, recurring key ideas were transformed into codes. Similar codes were then grouped to form sub-themes. These sub-themes, when combined, constituted the main themes that reflect the vision, priorities, and political context—in other words, the paradigm for the Forest Policy

and the regulatory and legislative texts. For the legislative and regulatory texts related to the forest policies, the themes that emerged during the analysis will be compared with the fundamental principles and main orientations to facilitate their interpretation.

RESULTS

The results highlight the key transformations in Forest Policy paradigms and their components. Furthermore, the analysis of semi-structured interviews made it possible to identify how stakeholders perceive these paradigm shifts.

1. The main paradigms of Madagascar's Forest Policy from 1990 to 2025

From a legislative perspective, Madagascar's Forest Policy has been shaped by two significant legislative developments: Decree 97-1200, which adopted the Malagasy Forest Policy, and Decree 2017-376, which established the Forest Policy of Madagascar. Thematic analysis of Decree 97-1200 revealed a Forest Policy more focused on conservation, coupled with the sustainable use of forest resources. This policy envisions a balance that allows for both the exploitation of resources by stakeholders and their preservation. However, it is also clear that this policy aims to address the significant loss of forest cover in the past and to minimize future threats that could lead to further deforestation. This policy highlights that the loss of forest cover is harmful not only to the environment but also to the economic actors who depend on these resources for their livelihoods. In line with its conservation goals, the policy primarily promotes the control of bushfires and reforestation. For sustainable exploitation, the policy emphasizes improving forest administration, better management of revenues, commercialization, and support for ecotourism. As for the tools mentioned for implementing this Forest Policy, it refers to decentralized entities and the establishment of a forest fund to manage forest royalties. The thematic analysis of Decree 2017-376 reveals a strong commitment to greater stakeholder inclusion in forest resource management. This policy advocates for the enhancement and revitalization of a new forest administration, alongside the active involvement of all stakeholders. Consequently, the paradigm underpinning this Forest Policy is founded on stakeholders as the central pillar of forest management. This vision promotes the transfer of responsibilities and the delegation of public conservation service missions to the various stakeholders. According to the thematic analysis results, this policy encourages collaboration among sectorial and institutional actors as well as the sustainable management of forest revenues. Nevertheless, throughout the data analysis, landscape restoration and combating deforestation also emerged as key themes involving stakeholder engagement. Regarding the instruments specified in this decree, existing stakeholders and the REDD+ mechanism are prominently featured.

Table 1: Paradigms of the 1997 and 2017 Forest Policies

Decree 97-1200	Decree 2017-376
<p>Paradigm: Conservation & Sustainable Use</p> <p>Framework: The loss of forest cover has a negative impact on the economic situation of stakeholders</p> <p>Overall Policy Objective: To establish a balance that allows both resource exploitation and conservation</p> <p>Key Concerns: Control of bushfires, improvement of forest administration, reforestation, revenue management, commercialization, watershed management, ecotourism</p> <p>Financial Instrument Implemented: National Forest Fund (FFN) (non-operational)</p>	<p>Paradigm: Stakeholder Participation</p> <p>Framework: Stakeholder participation enables the enhancement and revitalization of a new forest administration</p> <p>Overall Policy Objective: Empower local actors in the management of forest resources</p> <p>Key Concerns: Landscape restoration, combating deforestation, collaboration among sectorial and institutional actors, sustainable management of forest revenues</p> <p>Financial Instrument Implemented: REDD+</p>

2. Supporting Measures of the Forest Policy

The thematic analysis of Decrees 97-1200 and 2017-376 provided a comprehensive overview of the major paradigm shifts in Forest Policy. However, the accompanying texts are not prominently featured, highlighting the need for their analysis. To this end, administrative and regulatory texts related to Forest Policy were categorized according to recurring themes and subsequently analyzed individually through inductive thematic analysis. The classification of regulatory and legislative texts based on recurring themes provides guidance for the implementation of the 1997 Forest Policy (Table 2) and the 2017 Forest Policy (Table 3).

2.1. The 1997 Forest Policy

Texts predating the 1997 Forest Policy already provide a foundation for its implementation. However, additional texts are necessary to achieve certain objectives, underscoring the need for their analysis.

Table 2: Classification of regulatory and legislative texts based on recurring themes for the 1997 Forest Policy

Themes of Legislative and Regulatory Texts	References of Texts (in chronological order)
Forest Policy (Revision)	_ Decree No. 2005-849 _ Decree No. 98-781
Forest Exploitation	_ Order No. 6686/2000 _ Order No. 12702/2000 _ Order No. 12704/2000 _ Decree No. 2001-068 enforced by Order No. 3710/2001 _ Interministerial Order No. 19560/2004 _ Law No. 2005-018 _ Interministerial Order No. 17914/06 _ Order No. 18392/2006

	MINENVEF _ Interministerial Order No. 10885/2007 _ Interministerial Order Mine-Forests No. 18633 _ Decree No. 2010-141 _ Ordinance No. 2011-001
Forest Administration	_ Decree No. 97-281 _ Decree No. 99-951 _ Decree No. 2000-027 _ Decree No. 2000-028 _ Order No. 12703/2000 _ Decree No. 2001-122 _ Order No. 7340/2004 _ Decree No. 2013-785 _ Decree No. 2017-1106
Vegetation Fires	_ Decree No. 2002-793
Reforestation	_ Decree No. 2000-383 _ Order No. 9398/2000
Financing	_ Decree No. 98-781 _ Decree No. 2000-355 _ Decree No. 2001-1123 _ Decree No. 2001-475 _ Order No. 6833/2001 MEF/SG/DGEF _ Order No. 7604/2001 _ Decree No. 2004-935 _ Order No. 20489/2008 _ Order No. 741/2012 _ Order No. 25608/2014
Conservation and Protected Areas	_ Law No. 2001-005 _ Order No. 18177/2004 _ Decree No. 2005-013 _ Decree No. 2005-848 _ Order No. 45329/2011

	_ Order No. 4667/2002
	_ Order No. 5862/2005

The main paradigm of the 1997 Forest Policy is primarily focused on balancing conservation and exploitation. This 1997 policy sets out four major orientations framed by six fundamental principles. The analysis of legislative and regulatory texts related to the Forest Policy has made it possible to align these texts with the major orientations. The first orientation is aimed at combating the process of forest degradation. The themes of the related texts refer to the establishment of incentive measures for bushfire prevention and the creation of Protected Areas (PAs). Indeed, among the objectives of this orientation is the expressed intention to contribute to the control of bushfires. This commitment is reflected in the texts through the introduction of incentive measures, such as the granting of bonuses to municipalities that have made efforts to combat bushfires (Decree No. 2002-793). The implementation of this measure also aligns with the principle of improving management practices through the use of incentive measures. Also among the objectives of this orientation are the preservation of forest heritage and the maintenance of major ecological balances. The analysis of the texts highlights the establishment of conservation areas such as Protected Areas, sensitive forest zones, and forest stations (Law No. 2001-005; Decree No. 2005-013 and No. 2005-848; Order No. 45329/2011, No. 4667/2002, No. 5862/2005, No. 18177/2004).

The second orientation refers to improved management of forest resources. One of its objectives is to exploit forest resources in a rational manner. The analysis of the texts revealed suspensions, prohibitions, and regulations concerning forest exploitation activities. Specifically, the texts indicate the suspension of activities (logging permits, cutting permits, etc.) in numerous sites (Order No. 12702/2000; Interministerial Orders No. 19560/2004 and No. 17914/06; Interministerial Order Mine-Forests No. 18633), the prohibition of exploitation or export of forest products (Decree No. 2010-141; Interministerial Order No. 10885/2007; Ordinance No. 2011-001; Law No. 2005-018; Order No. 12704/2000), and the regulation of certain forest products (Order No. 6686/2000). However, these suspensions and prohibitions, while aligned with the objective of the second orientation, do not reflect the principle of improving management practices, which focuses more on adopting incentive measures than on strengthening prohibition systems. The reorganization of the forest revenue system is also one of the objectives of this second orientation. The analysis of the texts shows the Government's commitment to achieving this objective, particularly by addressing issues such as determining the amount of fees (e.g., Order No. 25608/2014), managing these fees (e.g., Decree No. 2001/475), and allocating revenue from seized or confiscated products (e.g., Order No. 7604/2001). The analysis of the texts also highlights the introduction of environmental mediators, which aligns with the goal of establishing forestry professionalism under this second orientation. These mediators serve as facilitators in negotiations between grassroots communities and their partners (local authorities, technical ministries, and the relevant municipalities). To operate

effectively, they must undergo a selection process followed by training (Decree No. 2000-028).

The third orientation of the 1997 Forest Policy relates to increasing the forest area and potential so that it can sustainably fulfill its economic, ecological, and social functions over the long term. The analysis of the texts highlights the creation of incentive measures in the form of in-kind benefits (land and technical incentives) and financial benefits (subsidies or exemptions from fee payments) for reforestation activities (Decree No. 2000-383). This measure not only addresses two objectives of the third orientation of the 1997 Forest Policy but also aligns with the principle of improving management practices through the use of incentives. During the thematic analysis of the texts, themes emerged that do not fall directly under the objectives of the major orientations but align with the key principles of the 1997 Forest Policy. The first principle of the 1997 Forest Policy is its conformity with the national development policy, specifically decentralization. Throughout the text analysis, a clear commitment to decentralization is evident, involving local actors in actions requiring deliberation or consultation (Decrees 98-781 and 2005-849). This commitment to decentralization is further demonstrated in the establishment of management contracts within the framework of contractual forest management by grassroots communities (Decrees No. 2000-027, No. 2001-122), the co-management of forest areas, and the delegation of forest areas by the State for the creation of Protected Areas, national forest domains, and sustainable forest management sites (e.g., Law No. 2001-005; Orders No. 45329/2011, No. 4667/2002). Beyond the decentralization through grassroots communities, their establishment also aligns with three principles of the 1997 Forest Policy: the accountability of local actors through management contracts, the contribution of the forestry sector to economic development (as management contracts enable grassroots communities to commercially exploit the forest and export forest products), and the conservation of forest resources through appropriate sustainable management (communities may exploit the forest provided that it does not affect the forest's productive or reproductive capacity or biodiversity).

Finally, the analysis of the texts revealed government initiatives to conform to the principle of adapting forestry actions to the country's realities through the creation of the Forestry Sector Observatory (Order No. 12703/2000), the Interministerial Mining and Forestry Committee (Order No. 7340/2004), and the Interministerial Coordination Committee for the "Local Community Management of Vegetation Fires" Program.

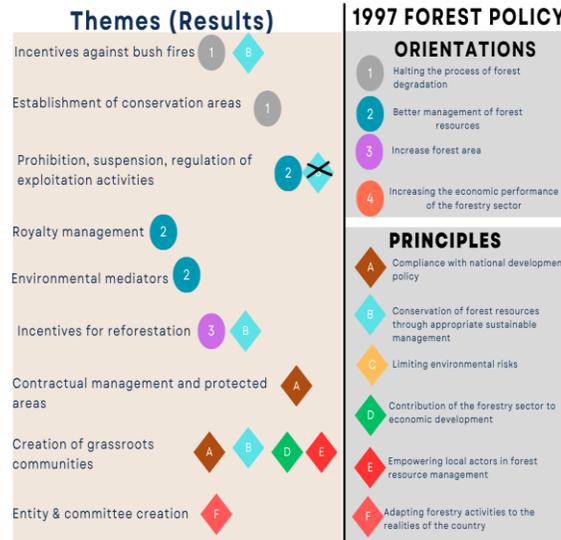


Fig. 1: Themes of the texts accompanying the 1997 Forest Policy

2.2. The 2017 Forest Policy

The texts established for the 1997 Forest Policy provide a foundation for implementing the 2017 Forest Policy. However, the introduction of additional texts is necessary to achieve certain objectives, hence the need to analyze them.

Table 3: Classification of regulatory and legislative texts according to recurring themes for the 2017 Forest Policy

Themes of Legislative and Regulatory Texts	References of Texts (in chronological order) General
General	<ul style="list-style-type: none"> _ National Forest Master Plan (Plan Directeur Forestier National - PDFN) _ National Strategy on the Restoration of Forest Landscapes and Green Infrastructure in Madagascar _ Decree 2017-757

Forest Administration	<ul style="list-style-type: none"> _ Order No. 14282/2019 MEDD _ Decree 2017-756
Reforestation	National Synthetic Directives for Reforestation Actions
Financing	<ul style="list-style-type: none"> _ Decree No. 2017-693 _ Note 005-MEF/SG/DGT/DCP/SRCF/DREG dated July 19, 2019 by the Ministry of Economy and Finance
Forest Resource Management	<ul style="list-style-type: none"> _ Order 13672-2017
Exploitation	<ul style="list-style-type: none"> _ Order 13673-2017
REDD+	<ul style="list-style-type: none"> _ Decree No. 2017-1083 _ Decree 2018-500 _ REDD+ Manuel CAS _ Decree 2021-1113
Conservation and Protected Areas	<ul style="list-style-type: none"> _ Decree 2017-415 _ Decrees and Orders related to the delegated management of Protected Area sites

The main paradigm of the 2017 Forest Policy is based on the active participation of stakeholders. This 2017 policy presents three major orientations framed by three fundamental principles. The analysis of legislative and regulatory texts, as well as documents from relevant ministries related to the Forest Policy, made it possible to align the publication of these various texts with the major orientations.

The first orientation of the 2017 Forest Policy is to ensure the sustainable and efficient management of Madagascar's forest capital. The analysis of legislative, regulatory, and general texts highlights efforts in reforestation, whether through the government or other actors managing Protected Areas. Furthermore, reforestation aligns with the central government's policies, which aim to restore degraded lands through an intensive planting policy.

The analysis also highlights other government initiatives to ensure sustainable and efficient forest

management, including the creation of new Protected Areas and the principle of land neutrality. The creation of new Protected Areas is incorporated in the third principle of the 2017 Forest Policy, while land neutrality complies with the State’s central and sectorial policies. The analysis of the texts revealed this commitment through the establishment of training centers for forestry technicians, as well as the implementation of standards related to forest-related activities. The establishment of these standards contributes to this second orientation and also aligns with the second principle of the 2017 Forest Policy by creating a framework for appropriate sustainable management.

The third orientation of the 2017 Forest Policy is the establishment of sustainable financing mechanisms for the conservation and sustainable management of forest resources. The analysis of the texts highlights those related to REDD+ as a mechanism that promotes funding for forest-related activities. During the thematic analysis of the texts, some themes emerged that did not fall directly under the objectives of the main orientations.



Fig. 2: Themes of the texts accompanying the 2017 Forest Policy

3. Forest Financing Mechanisms Traced in the 1997 and 2017 Forest Policies

Forest financing has always been mentioned in the 1997 and 2017 forest policies. The thematic analysis of texts related to these policies made it possible to trace the functioning of financing mechanisms. This analysis revealed four themes associated with forest financing. These themes are: governance of funding, capitalization of funding, utilization of funding, and supervision of funding. The theme of funding governance revealed that it can occur at multiple levels: locally, centrally, or within other entities. At the

local level, governance may be undertaken by grassroots communities, decentralized territorial authorities, or protected area managers, who are responsible for administering funds collected directly at the local scale. At the central level, the analysis of documents identified two main channels: forest financing through the Finance Law (LF) and through specific treasury accounts, such as commercial accounts (e.g., AFARB) and special allocation accounts (e.g., REDD+). Finally, the analysis of the texts also highlighted the governance of funds by other public or private entities, including NGOs, associations, companies, and individuals.

Table 4: Governance of Funding

Type of Governance	Characteristics
Local (communauté de base, etc.)	Direct use of resources collected locally
Central Government	- Resources collected at central entities and redistributed through the Finance Law (LF) - Resources deposited in special Treasury accounts
Other Public or Private Entities (e.g., NGOs, associations, companies)	Direct use of resources collected locally

The analysis of texts related to the Forest Policies also highlighted the theme of **funding capitalization**. This concept refers to the capacity to mobilize resources for financing forest-related activities. The review identified two main categories of resources: **national resources** and **international resources**. Regarding national resources, several actors hold the capacity for capitalization, including the government through the forest administration, local communities, and certain public or private entities. The analysis further identified a range of potential resource types that can be mobilized, such as green taxes imposed on specific products or activities, debt-for-nature swap mechanisms, various fees (e.g., filming rights, intellectual property rights); different forms of royalties; Payments for Environmental Services (PES); revenue reallocation within the same network; sponsorship by local businesses; voluntary contributions from operators; philanthropic grants; the sale of products seized from illegal activities; financial

compensations; and trust funds. Regarding international resources, the analysis identified the government, NGOs, associations, and other public or private entities as actors capable of mobilizing such resources. For the types of international resources that can be mobilized, the analysis of the texts identified aid and cooperation for the financing of programs and projects, funding to obtain significant status for a protected area, financing for NGO programs and projects, and trust funds.

Table 5: Capitalization of Financing

Resource Category & Potential Mobilizing Actors	Types of Resources
National Actors: Government (through the forestry administration), local communities, and certain public or private entities	<ul style="list-style-type: none"> - Various rights (e.g., filming rights, intellectual property rights) - Various royalties - Payments for Environmental Services (PES) - Reallocation of revenues within the same network - Sponsorship from local enterprises - Voluntary contributions from operators - Philanthropic grants - Sale of products from infractions - Monetary compensations - Trust funds
International	<ul style="list-style-type: none"> - Aid and cooperation for

Actors: Government, NGOs, associations, other public or private entities	financing programs and projects - Funding to acquire important protected area status - Funding for NGO programs and projects - Trust funds
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The theme of fund utilization also emerged during the analysis of the texts. These funds are used for various activities, which can broadly be grouped into the following categories: financing activities outlined in different plans (management plans, business plans, annual work plans); investment expenditures; infrastructure and development costs; operating expenses; aid and subsidies allocated to reforests; equalization funds; transportation costs and various allowances; purchases of supplies and technical equipment; personnel expenses; technical assistance fees; forestry research costs; studies necessary for the success of specific initiatives; grants and benefits; bonuses to be awarded for seized products; and guarding fees related to seized products. Finally, the analysis of the texts revealed the theme of financing supervision. In the documents analyzed, supervision of funding is conducted through monitoring and evaluation processes carried out by various actors. These actors are identified as government entities (such as a ministry, a branch of a ministry, or the Court of Auditors) or non-governmental entities (banks, NGOs, donors, institutions). The texts also mention the frequency of these processes (semiannual, annual, etc.). In addition to the monitoring and evaluation process, the analysis highlighted another form of supervision: the production of reports by the entity responsible for managing the funds. The frequency of these reports also varies.

Table 6: Supervision of Funding

Type of Supervision	Characteristics
Monitoring and Evaluation	Conducted by governmental or non-governmental entities. Frequency of supervision: variable.
Report Production	Carried out by the

	entity responsible for managing the funding. Frequency of supervision: variable.
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4. Stakeholders in Relation to the 1997 and 2017 Forest Policies and Forest Financing Mechanisms

The analysis of legislative and regulatory texts related to the 1997 and 2017 forest policies identified various actors within the forestry sector. Formally recognized actors include: the ministry responsible for forests, the forestry administration, decentralized local authorities, public institutions or public utility establishments, individuals, companies, associations, NGOs, universities, and Protected Areas (whether private, authorized, public regime, or community-based). Beyond these actors, other stakeholders are also mentioned, such as ministries from other sectors that may influence the forestry sector and international entities. For the purpose of this article, the actors interviewed through semi-structured interviews were those within the Ministry responsible for forests, currently the Ministry of Environment and Sustainable Development (MEDD), and the Ministry that issued Note 005-MEF/SG/DGT/DCP/SRCF/DREG, which is the Ministry of Economy and Finance (MEF).

4.1. Knowledge of the Forest Policy within the MEDD and MEF

The thematic analysis of semi-structured interviews conducted at the MEDD and MEF revealed differing levels of knowledge regarding the Forest Policy within these two entities. On one hand, actors at the MEDD demonstrated a certain mastery of the Forest Policy, while on the other hand, actors at the MEF, who have some control over forest financing mechanisms, displayed a somewhat vague understanding of the Forest Policy and its orientations.

4.1.1. Disparate Knowledge of the Forest Policy within the MEDD and MEF

The analysis of the interviews revealed differing levels of understanding of the Forest Policy among respondents within the MEDD and MEF. Technicians and field agents at the MEDD possess a solid knowledge of the Forest Policy, with their actions guided by the directives of their respective services. These individuals demonstrate strong mastery of their local context and offer specific solutions to address the problems they encounter in their particular settings. In contrast, personnel working at the central level within the MEDD adopt a much more systemic approach, as does their perception of the Forest Policy. The thematic content analysis of these two groups shows that the technical staff of the MEDD perceive, interpret, and apply the Forest Policy with a contextual vision adapted to their specific field conditions, whereas those at the central level interpret and use the policy with a systemic vision that takes into account

the broader political, structural, and institutional climate within the MEDD. For the interviewees at the MEF, their knowledge of the Forest Policy is limited, though they are aware of certain orientations. However, this awareness does not stem from a detailed study of the policy but rather from a general understanding of the State’s environmental agenda, particularly regarding forests.

4.1.2. Disparate Knowledge of the Financing Mechanism within the MEDD and MEF

The analysis of the interviews also highlighted a disparity in knowledge regarding the financing mechanism among these actors. On one hand, MEDD technicians, who have greater access to knowledge about field realities, possess a vision of the financing mechanism focused on its tangible impact on the ground, resulting in a rather specific level of understanding. For these technicians, the forest financing mechanism encompasses contributions from international actors (NGOs, donors), the current government’s input, and the mobilization of forest revenues collected locally. On the other hand, central-level personnel at the MEDD have a more comprehensive understanding that includes multiple specific field cases. In addition to this, they also possess deeper knowledge of the institutional structures within their ministry, central-level trends, and the legislative, regulatory, and political frameworks. Like the technicians, central agents identified three types of financing mechanisms; however, they also include REDD+ and Payments for Environmental Services (PES) among these mechanisms. For actors within the MEF, their knowledge of forest financing mechanisms primarily relates to their own expertise and sector, with limited forestry-specific knowledge. They identified the following financing mechanisms: funding through the Finance Law (LF), external funding, and financing via Treasury accounts (such as the AFARB).

Table 7: Stakeholders’ Knowledge of the Forest Policies and Financing Mechanisms

Actors	State of knowledge of actors
MEDD technicians	<ul style="list-style-type: none"> - Reality on the ground - Type of financing mechanism identified: contributions from international actors (NGOs, donors), contributions from the government, and mobilization of forest revenues collected at the

	local level in connection with the forest
MEDD central staff	<ul style="list-style-type: none"> - Summary of realities in several settings - Knowledge of existing structures within the MEDD - Trends at the central level - Framework (institutional, legislative, regulatory, political) - Type of financing mechanism identified: the three types of mechanisms identified by technicians, REDD+, PSE
MEF actors	<ul style="list-style-type: none"> - Functioning of the MEF - Type of financing mechanism identified: financing via the LF, external financing, financing through Treasury accounts (example of AFARB)

DISCUSSION

Both Forest Policies highlight two distinct paradigms: the balance between conservation and exploitation, and the particular emphasis placed on stakeholders. Between the promulgation of the 1997 forest Policies and that of 2017, changes have been observed within the broader global environment (political, economic, sectorial, and social), which are factors explaining the shift in these paradigms [15]. However, this article focuses primarily on paradigms shifts related to forest management and their effects on financing mechanisms, and does not address paradigm changes in other sectors. It is nonetheless important to note that such changes and developments in other sectors have an impact on the existing Forest Policy, as coordination between sectors is essential to avoid conflicts of interest. In the case of Madagascar, this lack of coordination is a real problem and needs to be addressed [16].

To gain an in-depth understanding of the Forest policies, legislative and regulatory texts were identified for analysis. By examining these texts and aligning them with the orientations and principles of the 1997 Forest Policy, it became evident that there is a glaring lack of legislative and regulatory instruments that support the implementation of the objectives and orientations of the Forest Policy. On the one hand, this gap may be the result of limitations in the database used during the research; on the other hand, it may also be due to the actual non-existence of such texts. This absence and/or shortfall in the legal framework for the Forest policies can be explained by the administration's inability to promptly clarify the ambiguity surrounding older texts. Similar to the 1997 Forest Policy, only a quarter of the implementing decrees were enacted fifteen years after its adoption [17]. Due to this lack of legal instruments, the results of the forest Policy fluctuate depending on the intervention areas, making it difficult to assess their overall outcomes [18]. In addition to this shortfall, the content of the texts studied presents ambiguities that make their interpretation challenging. Such ambiguities in legal texts require close ministerial and cross-sectorial collaboration to ensure coherence and integrity in national actions [19].

The analysis of documents related to the Forest Policies has made it possible to identify forest financing mechanisms. The governance, capitalization, utilization, and supervision of these funds vary widely depending on the actors involved. The review of the texts reflects the existence of several financing mechanisms for forest management. However, the analysis of these documents does not allow for tracing the exact flows of resources and expenditures within each financing mechanism. Both Forest Policies have emphasized the need to establish sustainable and long-term financing for forests, focusing primarily on the actions of the central government, whereas achieving sustainable financing requires the genuine involvement of all stakeholders concerned with forest management [20]. Nevertheless, this contribution of funding by stakeholders is also mentioned in the texts, but with a lower frequency of occurrence, and relies mainly on the mobilization of resources at the local level and contributions from international actors. To ensure sustainable financing mechanisms, it would be more appropriate to refocus efforts on mobilizing resources locally and improving financing mechanisms at the central level. Although contributions from international actors constitute an important component of these mechanisms, they are known to be unstable [20].

Following the review of legislative and regulatory texts, the analysis of semi-structured interviews conducted within the MEF and the MEDD made it possible to determine their level of knowledge regarding the Forest Policy and forest financing mechanisms. The level of knowledge about the Forest Policy and financing mechanisms differs within the MEDD, and also between the MEDD and the MEF. Within the MEDD, technicians and central-level officers possess different knowledge, a difference that can be explained by their level of responsibility within their organization. The literature notably highlights the fact that certain knowledge is accessible only to particular groups of individuals holding specific

power. Thus, individuals in higher positions have a certain capacity to bring about change that those with lower status do not. However, the power held by individuals in higher positions is also subject to certain limits determined by their social position within the organization [21]. The analysis of the semi-structured interviews also revealed a difference in knowledge between the MEDD and the MEF. This difference can be explained by the existence of inter-ministerial compartmentalization and the lack of communication between the two ministries. This compartmentalization is, in fact, one of the causes of the lack of coordination of actions across different sectors, and it particularly affects the sustainable management of Madagascar's forest capital [16].

CONCLUSION

The 1997 and 2017 forest policies serve as guiding frameworks for forest management. Analyzing the associated changes helps to understand the evolution of the state of Madagascar's forests. Understanding the paradigms linked to each policy allows for a clearer grasp of their orientations. This article has identified these paradigms. Indeed, the analysis of the 1997 and 2017 forest policies revealed a shift in paradigm: the 1997 policy focused on conservation and exploitation, whereas the 2017 policy places greater emphasis on stakeholder empowerment. The 1997 Forest Policy aims to establish a balance that allows local communities to utilize the forest while ensuring the conservation of its resources. To achieve this, its concerns focus on exploitation through revenue management, commercialization, and ecotourism; and on conservation through bushfire control, improvement of forest administration, and reforestation. The 2017 Forest Policy expresses a commitment to establishing a new forest administration with greater stakeholder involvement. In this context, the policy focuses on engaging local actors in landscape restoration, combating deforestation, fostering collaboration among sectorial and institutional stakeholders, and managing forest revenues. To ensure the achievement of these policy objectives, regulatory and legislative texts are necessary to provide a foundation for implementing actions. During the study, texts related to the 1997 Forest Policy were identified during data collection. The analysis of these texts revealed nine themes linked to the orientations and core principles of the 1997 policy. Within the framework of the 1997 policy's orientations, halting forest degradation is supported by the use of incentive measures against bushfires and the establishment of conservation areas. To better manage financial resources, the texts outline prohibitions, suspensions, and regulations of exploitation activities, the management of royalties, and the professionalization of environmental mediators. With the aim of increasing forest area and potential, incentive measures for reforestation were implemented by the government. In line with the principles of the 1997 Forest Policy, the establishment of contractual management and protected areas aligns with the country's national development policies. The creation of grassroots communities also fits within this principle, while additionally supporting the conservation of forest resources through appropriate sustainable management, contributing to the economic development of the forestry sector, and promoting the responsibility of local actors in managing forest resources. Finally, the establishment of entities and committees aligns with the principle of adapting forestry actions

to the country's realities. Just as the 1997 Forest Policy was accompanied by supporting texts, the 2017 policy was also followed by numerous legislative and regulatory documents. The analysis of texts issued following the 2017 policy highlighted themes that correspond with its orientations and principles. The analysis revealed that Orientation 1 is primarily supported by measures related to reforestation. For Orientation 2, the texts document the creation of training centers and the implementation of standards pertaining to forest activities. The implementation of standards aligns with the vision of appropriate sustainable management outlined in the principles of the 2017 Forest Policy. Regarding the third orientation of this policy, the REDD+ mechanism is identified in the texts as a means to achieve the objectives stated in this orientation. Through the analysis of these same texts, financing mechanisms were also traced. The emerging themes identified during the analysis relate to governance, capitalization, utilization, and oversight of funding. Funding governance may occur at the local, central, or other institutional levels. The analysis also highlights the categorization of funding into national and international sources, along with the identification of actors responsible for their management. The analysis also made it possible to identify the types of resources belonging to the national and international funding mentioned in the texts. Finally, the analysis of the texts revealed two types of funding supervision. This supervision may take the form either of monitoring and evaluation, or of the production of an internal report prepared by the entity responsible for managing the funding. To understand the situation, it is important to assess the level of knowledge among the stakeholders, which is why semi-structured interviews were conducted within the MEDD and the MEF. The knowledge levels of the interviewees vary between the two institutions. Within the MEDD, technicians and central-level staff have different approaches to interpreting the PF: technicians adopt a more specific approach, while central-level staff take a more systemic perspective. Staff at the Ministry of Economy and Finance (MEF) have limited knowledge of the Forest Policy, mostly based on directives expressed by the State. Technicians at the Ministry of Environment, Development, and Forestry (MEDD) have knowledge focused on specific field areas, while central-level staff have broader and less detailed knowledge and are more familiar with various frameworks (institutional, political, etc.). For staff at the Ministry of Economy and Finance (MEF), knowledge of the Forest Policy is limited and mainly based on the orientations expressed by the State. Regarding stakeholders' understanding of financing mechanisms, technicians at the Ministry of Environment, Development, and Forestry (MEDD) have knowledge restricted to specific field contexts, whereas central-level staff possess broader, less specialized knowledge and are more informed about various frameworks (institutional, political, etc.) For actors at the Ministry of Economy and Finance (MEF), their knowledge is mainly related to their own field and ministry. In conclusion, this article highlights the insufficiency of measures taken at the central level regarding texts for forest policies and financing mechanisms. Nevertheless, the production of these texts by the central authority reflects a conventional view of how to effectively implement real change. Adopting a more systemic approach that encourages interaction and communication among stakeholders may be better suited to the situation[15].

To ensure effective forest financing mechanisms, efforts must come from all stakeholders and not focus solely on mobilizing the central authority, as it cannot efficiently coordinate and supervise the numerous users of forest resources spread over a large territory on its own [22].

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