

Contribution of Geotourism to the protection of forest resources of Madagascar

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ABSTRACT

Tourism plays a key role as an engine of economic and social development of countries. Not only in the tourism industry itself, but also in other sectors. The economic impact of tourism is also considerable, since it is the source of growth in investment in infrastructure and is a source of foreign currency of great importance, not subject to purchase obligations and specific payments. In the current state of Madagascar's tourism infrastructure, the tourism destination is essentially sold as a nature-adventure product. And, Geotourism, one of the branches of tourism, can be beneficial to a region and cause problems there. If planned, developed and managed correctly, it generates both employment and income, generally leading to an increase in the standard of living of the communities bordering the resources.

Keyword: *Tourism, Geotourism, Forest resources, Madagascar.*

1. INTRODUCTION

Sustainable tourism development is about making tourism development compatible with environmental conservation (in the broadest sense), i.e. firstly, to protect the quality of the environment by preserving biodiversity and ecosystems. Second, to achieve the objectives of improving the quality of life of the host community by preserving inter-generational equity, ensuring the cultural integrity and social cohesion of communities. And finally, to provide a quality experience for visitors. In this sense, tourism, a major consumer of natural resources, is a privileged sector that can play a crucial role in the protection, conservation and enhancement of the environment.

Forests are one of the most precious ecosystems of Madagascar. They are the sanctuary of a considerable variety of species and the repository of a rich diversity of genetic resources. They provide essential environmental services, from soil and watershed conservation to protection against floods, landslides and other natural disasters. These forests have a crucial role to play in maintaining the climate balance as carbon reservoirs and sinks. In addition, they represent important sources of revenue from tourism. This craze requires the sustainable contribution of forest resources and calls for a new way of thinking about public action with the development of a territorial tourism diagnosis highlighting its characteristics, its challenges and its opportunities for sustainable development.

The problems, which arise from the development of the tourism sector, is ambiguous, both from the point of view of the products to be offered on the market, and at the level of the responsible entities in charge of the implementation of this activity. It generates, in fact, confused situations born from the imbalance of the ecosystem threatened of degradation due to the inexistence of a monitoring of the economic impacts of tourism towards the environmental services, and by spillover effect towards brutal climate changes.

Beyond the questioning of the functioning of the sector, other more current concerns exist for the Malagasy case. Is tourism compatible with the conservation of natural heritage? Can cash flows in forest areas contribute to a harmonious management of the tourism sector for a sustainable development? In sum, the main concern of this research is to find the explanatory elements that allow us to answer the major problem that is both simple to express and complex to address. It is held by the following question: In what way does Geotourism contribute to the preservation of Madagascar's natural resource wealth? A major hypothesis was put forward to answer this question: "Geotourism favors the channeling of monetary flows in forest areas". The data needed to complete this research

was drawn from two sources: theoretical (from journals, books, documents and websites), and empirical (information collected from the relevant administrations).

2. METHOD AND RESULT OF PROTECTION'S FOREST RESSOURCES

Madagascar is recognized as a privileged sanctuary of biodiversity. The natural resources can make this country a privileged destination for tourists. Tourism is part of the tertiary sector which is assimilated to the service sector. Tourism is also a market sector that obeys the law of the market. The notion of market implies the existence of producing agents and consuming agents. The products of the tourist market have their particularity by the fact that they oblige the consumers to move, i.e. the tourists buy these products during their trip. However, let us underline that numerous are the problems which prevent the Malagasy tourism to reach its optimal level of exploitation. As regards the economic contribution of the tourism sector, the most salient problems are among others: (i) the pitfalls at the macro-economic level, (ii) the threats at the micro-economic level, and (iii) the socio-political problems.

However, while quality sites are sought, very often an environment will be developed where a welcoming environment is created. The examples of many sites in the country are classic and favorable to Geotourism. Channels of monetary flows in these areas allow to highlight this type of tourist development. But what is really the case of these cash flows for forest areas?

Cash flows are often described as a direct extension of income and expenditure. Both sets independently present estimates of the sectors' lending and borrowing, but in the case of income and expenditure, it is the end of the latter, whereas for cash flows it is the beginning. It is true that the financial accounts can be viewed primarily as a statement of how capital flows from sectors with surpluses or savings to those whose investment programs exceed their savings.

The finer sectoral definition of the cash flow accounts is primarily for the corporate and government business sector, which is further subdivided into non-financial enterprises and financial enterprises. The financial sector is further disaggregated to provide detailed information on the role and market share of different types of financial institutions. Most of the capital that flows through the economy passes through financial institutions, with a generally smaller portion flowing directly between primary lenders and borrowers. The primary activity of financial institutions, which is the borrowing and lending of money, and the matching of the needs of lenders and borrowers are highly specialized. This translates into the concept and detailed classification of money flows, and its specificity

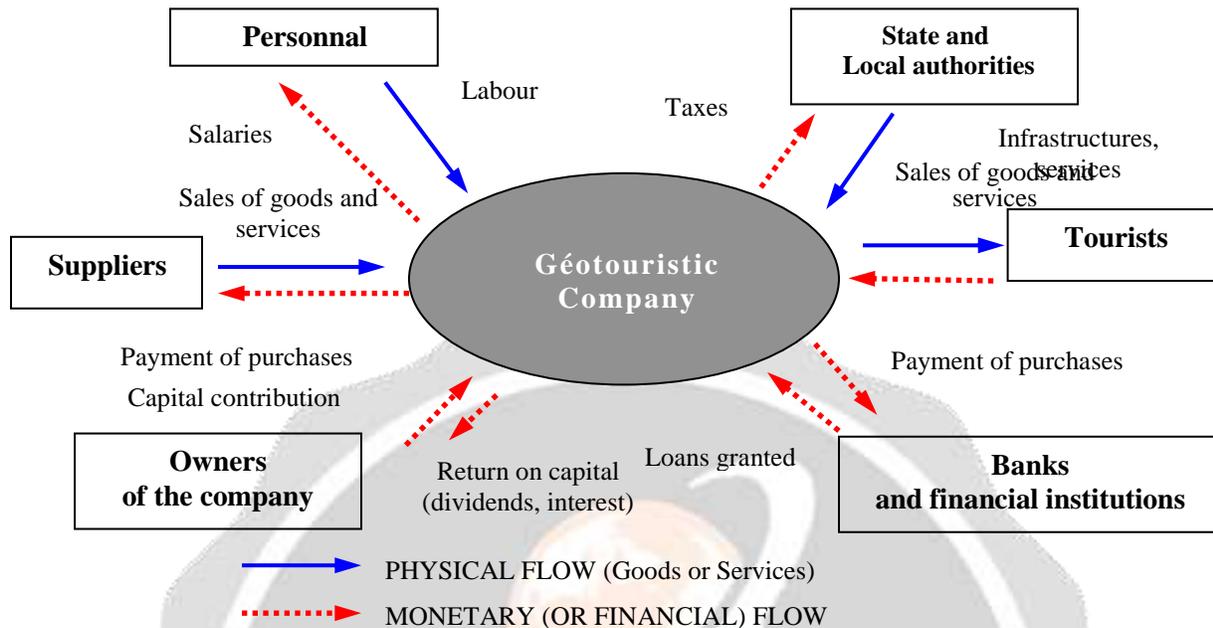
The activity of the company and its relations with its partners creates exchanges of information, goods and money circulating inside and outside the company. These movements generate flows. Every flow has a point of departure (origin) and a point of arrival (destination). The origin of the flow implies a resource; and the resource represents the necessary means that allowed the economic operation to be carried out. The destination of the flow implies a use; and the use represents the use that is made of the resource allocated to the economic operation.

Nowadays, the notion of sustainable tourism is in permanent correlation with the concept of sustainable development in a triptych sense of the W.T.O. adopted in 1995: "it must be ecologically sustainable in the long term, economically viable, and ethically and socially equitable for the local populations". This details the main elements of the different motivations of Geotourism, namely

- The ecological environment to be protected and enhanced: It includes both nature and wildlife, landscape, historical and architectural heritage as well as ethnological and cultural heritage. The environment (in the broad sense) which is the raw material of Geotourism;

- The research of Geotourism through a global strategic planning: it necessarily induces to a reflection, a consultation, a constant information, a participation in the decision making process and a partnership of all the actors

Figure 1 : Flows generated by the activity of a tourism company



In Madagascar, development plans are required before developing a tourist area in which we are concerned with harmonizing the components in order to respect the quality of the environment. Thanks to tourism, many sites have been protected and developed, such as: parks, wildlife reserves, monuments and archaeological sites, scenic routes, and even the survival of artisanal activities. However, the arrival of tourists requires measures to protect the environment and contribute to its safeguard.

The attractiveness of Madagascar as a tourist destination is based almost entirely on a diversity of natural experiences. These experiences revolve around the richness of its natural capital (flora, fauna, beaches) and correspond respectively to natural, discovery and beach tourism. Madagascar is thus increasing its attractiveness by diversifying the product offered in terms of discovery, culture, cruises and business while strengthening the already established natural and beach tourism. Madagascar must continually evaluate tourism options that show growth potential in order to develop new products that can complement and revitalize those already offered. In this way, the importance of the flows generated leads to the development of economic activities in the forest areas. This verifies and confirms the hypothesis posed.

3. RANDOM EVENT IN DYNAMIC RESEARCH

In organizational management, in both the private and public sectors, considerable emphasis is placed on improving decision-making processes: "one must be able to predict the circumstances surrounding a particular situation and decision." To fully appreciate that no single research and data collection method can cover all the needs that arise in all tourism decision-making situations, it is useful to consider the range of research and data collection tools that can be useful in the quest for information.

In Madagascar, forest management depends on the forestry contract management, which is a contract between the State and the local community, called the Base Community or BC for a period of three years, renewable to 10 years, with a view to sustainable and secure local management of forest resources, in application of Decree No. 2001-122 setting the conditions for the implementation of the Contractualized Management of State Forests, and promulgated on 14 February 2001. The BC is a voluntary grouping of individuals united by the same interests and obeying the rules of common life: DINA (The content of the DINA concern the rights of use, the economic development of forest resources, the sustainable management of the Forests, the collection and distribution of dividends; with specifications, the implementation of the management plan, the payment of royalties and to refrain

from all deliveries of forest clearing authorizations, logging permits to persons other than the members, commercial hunting permits). It brings together, depending on the case, the inhabitants of a village or a group of villages. These practices were initiated through the implementation of the National Environmental Action Plan after the promulgation of Law N°. 90.033 on the Environmental Charter. The country has a particularity in terms of flora, fauna, landscapes and other cultural resources:

- From the floristic point of view, the primary forests contain many species of precious wood and of great commercial value such as rosewood (*Dalbergia*), ebony (*Diospyros* with its many species), Varongy (*Ocotea*), Nato (*Fauchera* or *Nimuspops*) and many others; but also house many medicinal species belonging to different families. Of the 12,000 species of vascular plants, 18% of which are endemic, there are several species of orchids and palm trees. Of the eight species of Baobabs (*Andansonia*) that exist on our planet, seven are typically Malagasy.

- From the faunistic point of view, they constitute the habitats of numerous endemic animal species, of which here are some examples.

- Of the 179 terrestrial amphibians surveyed, only three species in the family Ranidae are not endemic, for a 98% endemicity rate.

- For aquatic amphibians (frogs), endemism at the species level also reaches 98%.

- For terrestrial reptiles, there are 363 species of which more than 90% are endemic.

- For terrestrial Mammals: 140 species and subspecies listed, only four are introduced, hence an endemicity rate of 97.14% for wild Mammals. For Primates, 48 species and subspecies of lemurs currently live in Madagascar. They are all endemic and are divided into five families.

- For terrestrial insects, a high percentage of endemism has been appreciated: Coleoptera 100%, Lepidoptera 95 to 98%, Arachnids 60 to 65%.

More than 70% of the Malagasy population still lives in rural areas. The forest offers a means of subsistence for the farmers even in the example of firewood. With development and environmental programs, there is more and more integration of the local population in their own development, such as the transfer of natural resources management.

Transfer involves resource management by local people or multi-stakeholder application in management. Management can include the local community, of course, but also other partners such as NGOs in addition to local authorities. In Madagascar, community-based management is known as Transfer of Management and it is the grassroots community that manages the resources, with NGOs intervening to support the actions of the local population and the authority to supervise.

Community management means transferring to the locality, managing the environment so that there is no degradation and so that there is long-term development of the locality. In addition, joint management should reduce management problems. In Madagascar, the transfers of management concern mainly forest resources and marine resources. But the most advanced transfers are the transfers of forest resources management with the Contractualized Management of Forests. This is a method of transferring forest management to grassroots communities for sustainable and secure local management of natural resources. It is defined as the mode of transferring forest management to grassroots communities with a view to sustainable and secure local management of forest resources.

Madagascar has a population of 18 million with a population growth rate of 2.8%, of which 80% live in rural areas. Since 1971, Madagascar has experienced cyclical political crises that have only accentuated the level of poverty that the country has experienced since independence. These crises have had a significant impact on the economy through the closure of businesses, increased unemployment, reduced customs and tax revenues, and the suspension of budgetary support. In addition, Madagascar has not been spared the impacts of the global financial recession, which has also led to a decline in foreign aid, and global export demand.

However, the political crises that Madagascar has gone through have provided the country with an opportunity to redress political practices and to give new meaning to the notions of citizen participation and human rights in the country. The Malagasy Government considers tourism as one of the best ways to promote citizen participation and to lay the foundations for a real development at all levels with the support of the Ministry in charge of Territorial Planning and Decentralization. The objectives are, on the one hand, to boost the national economy from the bottom up, thanks to decentralized governance, and on the other hand, to improve the living conditions and

increase the income of local populations through the support of a local development fund to support communal investment needs and capacity building programs for local authorities.

This local development fund from the Departments is identified as an important measure to address: (i) the socio-economic problems of vulnerable groups through social protection activities in rural and deprived areas, (ii) the lack of financial resources to improve services in forest areas through the construction and rehabilitation of communal infrastructure, (iii) the weak management capacities of communities, and (iv) the lack of dialogue between decentralized local authorities, deconcentrated services and the population in order to guarantee the functionality of basic social services.

Figure 2: Diagram of the contribution of a tourism fund to local development

Goal	SPECIFIC OBJECTIVES	RESULTS
Contribute to the equitable socio-economic development of the 1,549 communes and to the improvement of the living conditions of the population	Increase the capacity of municipalities to carry out their mandate within a growing financial perspective	<ul style="list-style-type: none"> - Funds are available to finance municipal projects - The skills of communal leaders in governance and communal project management are increased - Communal officials apply the laws and regulations relating to the performance of their duties - Dialogue between the sectoral ministries, local authorities and the population is improved, guaranteeing the functionality of basic social services.

The strategy is based on two components, including the financing of communal investment activities through different approaches (High Intensity Workforce, Regie, with Enterprise) and the strengthening of the capacities of the communes to ensure their mandate within the framework of a growing financial perspective.

Geotourism is a sector with multiple advantages on all levels: environmental, economic and social. It plays an important role in the protection of the environment, the conservation of biodiversity and the sustainable use of natural resources. Through its financial contributions, it protects and regenerates natural assets, creates an environmentally friendly infrastructure, and ensures good environmental management. It also contributes to a better understanding by the local population of the financial value and intrinsic value of natural and cultural sites, and thereby motivates communities to reclaim their natural heritage through environmental protection and conservation.

Geotourism is a source of enrichment in many ways; it represents one of the few opportunities to obtain foreign exchange of tax revenues essential to the modernization of the economy and the import of equipment for social improvement. Not only does it facilitate the creation of jobs, but it also contributes to the distribution of wealth among regions with different income levels. This allows us to affirm that the attractiveness of geotourism encourages the dynamization of forest areas.

The analysis made allows us to note that on the one hand, Geotourism constitutes a real pole of development because of the direct and indirect repercussions that it exerts on the whole national economic sector; and on the other hand the development of this sector in Madagascar will pass by a more increased and more convincing promotion of the activities in the rural and remote zones. For their part, investors aim to make a profit over several periods. The logic of producers is obviously to maximize their profits and minimize their risks. Investors in the tourism sector are no exception to this logic. For tourism operators, the profitability of their investments depends on the number of tourists who come to visit the country. Therefore, it is in the interest of these investors to carry out attractive campaigns in forest areas to attract tourists.

An underdeveloped country like Madagascar, with a very low level of income and consequently a very low level of savings, has a low capacity to finance large investment projects such as the creation of hotels. If we want to

attract a growing number of tourists, the development of reception infrastructures is a must. Foreign Direct Investment in the hotel industry will contribute to this increase in hospitality infrastructure.

Therefore, the attraction of these investments in the sector is necessary to increase the number of hotels according to international standards in Madagascar, thus a development of investments that will boost the rural areas. It will have major consequences such as the increase of the incomes of the local population and the farmers in rural areas; and an increase of the number of Geotourism sites by the access in the forest areas. Hence, the importances of cash flows generated leads to the development of economic activities in forest areas are justified.

4. CONCLUSIONS

All these potentialities give Madagascar the possibility to become a new privileged tourist destination compared to the African continent and the other islands of the Indian Ocean. Madagascar has many Protected Areas existing since 1927 for the sake of preservation. These PAs are classified in three categories: the integral National Reserves, the National Parks and the Special Reserves. They are valuable sources for the promotion and development of tourism activity in the country and require a sustainable management by the local population.

Everyone has an interest in preserving the country's natural capital. Development and the construction of hotels and related infrastructure, as well as recreational activities, can damage or alter the country's natural environment, especially its forests and wildlife. Wherever possible, forest trees should not be removed to make way for new infrastructure. Special attention must be given to the protection, conservation and regeneration of terrestrial flora and marine ecosystems..

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