

National Wildlife Trade Policy Review

Madagascar

OVERVIEW

Madagascar ratified the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1975. A rudimentary wildlife trade policy, however, was in place in Madagascar well before this date.

The history of international wildlife trade management in Madagascar can be divided into four phases:

- A phase which preceded the ratification of the Convention and consisted in local management centred mostly on fauna (1960-1975);
- The second, start-up phase, after the ratification of the Convention, during which CITES regulations were poorly understood and only partially applied (1975-1990);
- A phase greatly influenced by the new environmental policy (1990-2002);
- The last phase, during which the Malagasy authorities took the initiative to implement CITES with adequate management tools (2003 - until now).

Although legislative and regulatory texts existed throughout these different phases, the extent to which their application was in line with the objectives set by CITES should be brought into question. A national wildlife trade policy review is extremely appropriate for this purpose; hence Madagascar's decision to participate in the UNEP/CITES initiative.

The findings of this project concern the general context of the national policy, its content and implementation, as well as some issues related to the qualitative assessment of the policy. The review reveals numerous gaps in the understanding of CITES, in its implementation and in relations between stakeholders. A lack of political will on the part of the Malagasy authorities is one of the main issues raised.

We would like to make the following recommendations:

- Ensuring the participation of all stakeholders from the authorities to the local communities;
- Setting up a clearing house and a steering committee to support the implementation of CITES;
- Redirecting research and studies;
- Securing long-term funding for the system;
- Implementing regulatory legislative texts;
- Improving the control and communication system; and
- Finalizing incomplete activities from the 2003 action plan.

ACKNOWLEDGEMENTS

The first initiative to conduct a national wildlife policy review was taken by UNEP-UNCTAD CBTF, CITES and GIDS and funded by the European Union and the Geneva International Academic Network. Its implementation in the country was fully approved by Madagascar's CITES Management Authority and its Scientific Authorities which are responsible for managing the implementation of CITES in Madagascar and are, therefore, fully-fledged actors in this policy, with the support of the CITES Secretariat in Geneva.

A number of national institutions and experts had to be mobilized in order to conduct this policy review. Thanks to a significant joint effort, it was possible to gather the necessary information and compile it in the present form.

Most of the institutions which were asked to contribute agreed to do so, thereby showing their interest in a review of Madagascar's national wildlife trade policy. Very useful data and information were provided by officials from public institutions, governmental and non-governmental organizations as well as Malagasy scientists, sometimes in a private capacity, known for their knowledge of Madagascar's wildlife trade.

In view of the wide scope of wildlife trade, the contributions made concerned different disciplines and sectors. The review team would like to express their sincere gratitude to all those who helped to bring this review of Madagascar's national wildlife trade policy through to a successful conclusion.

The following persons and institutions provided the data on the basis of which the review was conducted:

I. – VARIOUS MINISTRIES

- Ministry of Agriculture, Livestock and Fisheries
- Ministry of Economy, Trade and Industry
- Ministry of National Defence
- Ministry of Foreign Affairs
- Ministry of Justice

II. – STATE INSTITUTIONS

- L'Observatoire National de l'Environnement et du Secteur Forestier (National environmental and forestry sector observatory)
- Customs
- National police
- National gendarmerie
- Interpol
- Veterinary department
- Fishing department
- Phytosanitary and plant protection department
- Silo National des Graines Forestières (SNGF) (National tree seed centre)
- Parc Botanique et Zoologique de Tsimbazaza (PBZT) (Botanical and zoological park of Tsimbazaza)

III. – NON-GOVERNMENTAL ORGANIZATIONS

- JARIALA Project (USAID)
- Durrell Wildlife Conservation Trust (DWCT)
- The Peregrine Fund
- Conservation International (CI)
- Missouri Botanical Garden (MBG)
- Wildlife Conservation Society (WCS)
- World Wide Fund for Nature (WWF)
- Royal Botanical Gardens of Kew (RBG)

IV – INTERNATIONAL ORGANIZATIONS

- USAID
- World Bank

V – UNIVERSITY INSTITUTIONS

- Faculty of Sciences of the University of Antananarivo
- Department of Water and Forests at the School of Agronomic Sciences – University of Antananarivo

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LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|-------------|--|
| AC | Animals Committee (meeting) |
| ANGAP | Association Nationale pour la Gestion des Aires Protégées (National Association for the Management of Protected Areas) |
| BIANCO | Bureau Indépendant Anti-Corruption (Independent Anti-corruption Office) |
| CBD | Convention on Biological Diversity |
| CIMAD | Conservation International Madagascar |
| CIREEF | Circonscription de l'Environnement, des Eaux et Forêts (Regional Office for Water and Forests) |
| CITES | Convention on International Trade in Endangered Species of Wild Fauna and Flora |
| CNRE | Centre National de Recherche sur l'Environnement (National Centre for Environmental Research) |
| COAP | Protected Areas Code |
| CoP | Conference of the Parties |
| CTHA | Centre Technique et Horticole d'Antananarivo (Technical and Horticultural Centre of Antananarivo) |
| DGEEF | Direction Générale de l'Environnement, des Eaux et Forêts (General Directorate for Environment, Water and Forests) |
| DIREEF | Direction Inter-Régionale de l'Environnement, des Eaux et Forêts (Interregional Department for Environment, Water and Forests) |
| DWCT | Durrel Wildlife Conservation Trust |
| EIA | Environmental Impact Assessment |
| FFN | Fonds Forestier National (National Forest Fund) |
| GIDS | Graduate Institute of Development Studies, Geneva |
| IEFN | Inventaire Ecologique Forestier National (National Ecological Forest Inventory) |
| IFAW | International Fund for Animal Welfare |
| IUCN | International Union for Conservation of Nature |
| JIRAMA | Jiro sy Rano Malgache (Electricity and Water of Madagascar) |
| MA | Management Authority |
| MAP | Madagascar Action Plan |
| MBG | Missouri Botanical Garden |
| MECIE | Environmental Assessment Legislation |
| MDGs | Millennium Development Goals |
| MEEFT | Ministry of Environment, Water, Forests, and Tourism |
| NGO | Non-governmental Organization |
| ONESF | Observatoire National de l'Environnement et du Secteur Forestier (National Environmental and Forestry Sector Observatory) |
| PBZT | Parc Botanique et Zoologique de Tsimbazaza (Tsimbazaza Botanical and Zoological Garden) |
| PC | Plants Committee (meeting) |
| PS | Permanent Secretariat |
| SA | Scientific Authority |
| SAGE | Système d'Appui à la Gestion Environnementale (Environmental Management Support System) |
| SNGF | Silo National des Graines Forestières (National Tree Seed Centre) |
| UNCTAD/CBTF | United Nations Conference on Trade and Development/Capacity Building Task Force on Trade |
| UNEP | United Nations Environment Programme |
| USAID | United States Agency for International Development |

WCMC
WCS

World Conservation Monitoring Centre
Wildlife Conservation Society

1. Introduction

1.1 Background

Wildlife trade is a booming global activity which generates significant income for numerous local, regional, national and international communities. Therefore, there is an increasingly urgent need for trade which is not detrimental to the life of wild species in order to ensure the rational management of these wildlife resources. By acceding to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), countries can contribute to the conservation of marketed wildlife resources. CITES is the only way to regulate the flows of trade and transactions related to species of wild fauna and flora. This major international policy affects most national policies of the member States because it serves as a powerful tool which enables the international community to decide how many species should be put on the market.

This type of national trade policy, however, has often proved to be limited and not consistent enough with the state policy to play a role in a country's development. Moreover, these trade policies are only roughly in line with the CITES approach. This is true for many countries, including Madagascar. The idea of a review of national wildlife trade policy evolved during various CITES Conferences of the Parties (CoP):

- The Strategic Vision adopted at CoP11 (Gigiri, 2000)
- Decision 12.2 adopted at CoP12 (Santiago, 2002)
- Decisions 13.74 and 13.75 adopted at CoP13 (Bangkok, 2004)
- Decisions 14.21 to 14.24 adopted at CoP14 (the Hague, 2007)

The project to review national wildlife trade policy is an international initiative aimed at helping the beneficiary country to review its policy with a view to: ensuring more efficient conservation of its biodiversity; implementing CITES in accordance with the above-mentioned national policy; and achieving sustainable development and rational utilization of natural resource in line with the Millennium Development Goals (MDGs)¹.

1.2 Overall objective

The initial objective of this project is to enhance the country's capacity to assess wildlife trade policies and review their environmental, social and economic impacts in order to promote and implement the country's national policy in support of CITES for the purposes of sustainable development and poverty reduction in the country.

The biological, economic and institutional context of Madagascar, the country's intention to improve its environmental management policy in order to promote the Millennium Development Goals, the "Madagascar, Naturally" Vision² and the implementation of the Madagascar Action Plan prompted Madagascar to submit a message of interest in this review to the CITES Secretariat.

Despite the fact that the Government has already taken steps to integrate the "Madagascar, Naturally" Vision into its strategic documents, it is expected to be fully incorporated into government policies and approaches in the coming months and years.

¹ <http://www.un.org/french/millenniumgoals/>

² <http://www.madagascar-presidency.gov.mg/MAP/?id=&idy=&lang=2>

Madagascar is one of the four countries participating in the project. This is an opportunity to review the country's national wildlife trade policy. Despite the reform initiatives made by CITES in the last few years, such as bringing the Malagasy wildlife trade legislation into conformity with CITES, there are still gaps in the overall policy. Madagascar's commitment to preserve natural resources, as set out in the Durban Vision³, requires making trade activities compatible with conservation. At present, however, the state of this national policy is such that its content and application will still need to be worked out.

Madagascar has the opportunity to compile all the laws and texts regulating international trade and transactions in wildlife resources, assess the domestic policy governing national trade, implement these different policies, assess their environmental, economic and social impacts and harmonize these strategies. All this is in line with the objectives of the Madagascar Action Plan (MAP), the strategies and projects of which seek to achieve a real poverty reduction and a tangible improvement in the quality of life of the Malagasy people. The plan contains eight commitments; the seventh commitment consists in "cherishing the environment".

1.3 Specific objectives

The review has the following objectives:

- To understand and enhance the internal consistency of national policies on trade in CITES species;
- To integrate CITES into the national environmental policy;
- To maximize revenue for local communities from conservation activities with a view to contributing to poverty reduction;
- To enhance the participation of all stakeholders at all levels with a view to achieving fairer distribution of revenues generated by trade in species of wild fauna and flora;
- To evaluate the impact and efficiency of these policies and their relevance to the long-term conservation of CITES species.

To achieve the above objectives, the approach will be:

- To look at the current policy and its implementation: the laws governing wildlife trade in Madagascar;
- To identify the impacts of the current national policy; to evaluate the economic, social and environmental consequences of these policies for the local, regional and, if possible, national communities;
- To assess these impacts and the quality of the policy: its relevance, consistency and efficiency; and
- To issue recommendations and an action plan to reinforce the policy itself with a view to making it more relevant, consistent and efficient in managing national and international trade.

³ World Parks Congress, Durban, September 2003, Malagasy commitment: to triple the surface area of Madagascar's protected areas network to 6 million hectares by 2012.

2. Methodology

2.1 Training in Geneva

Two Malagasy representatives participated in a capacity-building workshop in Geneva (from 26 to 28 February 2007), organized by the Steering Committee. This workshop was aimed at achieving a common understanding of the objectives of the project and the expected results.

Upon return to Madagascar, a committee was created, which included representatives of: CITES Management Authority, Scientific Authorities for fauna and flora, the Department of Fisheries, the Ministry of Foreign Affairs, *Observatoire National du Secteur Forestier*, CNRE, SAGE, WWF, USAID, WCS, DWCT and CIMAD. The committee met several times and considered the presentation of the project, the recruitment of a coordinator and consultants, work with the GIDS expert, training, and the elaboration of an agenda for the entire project.

The advisers included social economists, biologists and lawyers.

Since all these processes took five months, capacity-building activities for local experts were conducted only at the beginning of August 2007.

2.2 Bibliographical studies

Bibliographical research was conducted in order to collect information related to the national policy on wildlife trade in general and on CITES in particular. Bibliographical work involved compiling different texts related to trade in Malagasy natural resources. The following types of documents were consulted:

- Laws which define the state policy on wildlife resources;
- Implementing texts for each policy, namely: implementing decrees, orders, directives at the institutional level, procedural handbook and terms of reference;
- Reports on activities of various institutions involved in the policy;
- Studies conducted in this field;
- Other additional documents deemed necessary for the completion of the review.

2.3 Consultations with different stakeholders

Consultations with the different stakeholders mentioned above were carried out in order to obtain information on the knowledge of the mechanism of implementation of the wildlife trade policy: Different ministries: Ministry of Environment, Water, Forests, and Tourism, Ministry of Agriculture, Ministry of Livestock and Fisheries; Ministry of Trade; Ministry of National Defence; Ministry of Foreign Affairs; Ministry of Justice

- State institutions: *L'Observatoire Nationale de l'Environnement et du Secteur Forestier*; Customs; national police; national gendarmerie; Interpol; Veterinary Department; Department of Fisheries; Phytosanitary and Plant Protection Department

CITES institutions in Madagascar:

- Scientific Authorities (flora and fauna); Department of Biology and Plant Ecology and Department of Animal Biology;
- CITES Management Authority, *Direction Générale de l'Environnement, des Eaux et Forêts*

Non-governmental organizations: JARIALA Project (USAID); Durrell Wildlife Conservation Trust (DWCT); The Peregrine Fund; Conservation International (CI); *Silo national des graines forestières (SNGF)*, *Parc botanique et zoologique de Tsimbazaza (PBZT)*; Missouri Botanical Garden (MBG); Wildlife Conservation Society (WCS); World Wide Fund for Nature (WWF); Royal Botanical Gardens of Kew (RWG)

International donors: USAID; World Bank

2.4 National start-up workshop

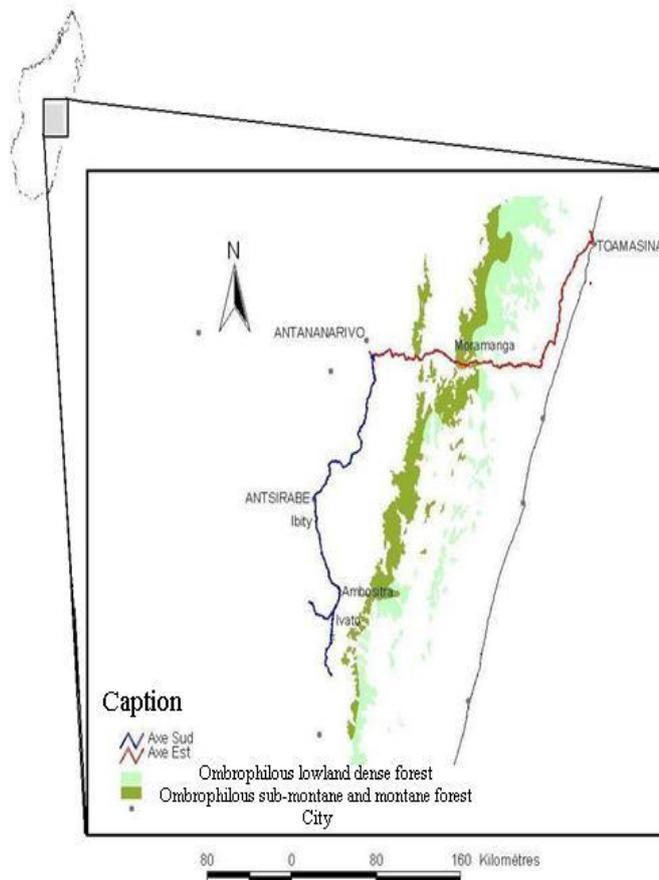
A national workshop held in Antananarivo on 30 August 2007 complemented the information obtained from the above-mentioned stakeholders since the beginning of the project. The absence of traders, who constitute the main link in the chain of wildlife trade, at the workshop prompted the participants to envisage a special meeting, which eventually took the form of private consultations with these stakeholders.

Participants were divided into working groups: scientists, administration officials, control officials and NGO representatives. They were asked to specify the positive and negative aspects of wildlife trade and give recommendations concerning their sector.

2.5 Field work

The approach adopted in carrying out field work consists in looking at the practical application of various laws governing the national policy on trade in wildlife resources. Visits were paid to many different stakeholders who, as a result of their important role at the beginning of the chain of trade, are vital to the implementation of the policy. It is equally essential to understand how they are involved in the system and how much they know about it.

Map 1: Ranges adopted for field work⁴



Questionnaires and consultations

Questionnaires filled out by different local stakeholders help to collect more detailed information, *inter alia*, on costs and prices and the type and number of species collected, which is what actually keeps the chain of trade in place. The questionnaires also make it possible to obtain socio-economic information on the places visited.

The main purpose of social and economic surveys is to gather information from different stakeholders on their links to wildlife trade as well as on how they are affected by the national wildlife trade policy in general. Moreover, additional data are collected from various local forestry authorities and other administrative authorities involved in the implementation of the wildlife trade policy (ex: Customs officials), who can be consulted in the visited areas.

The surveys were conducted in several stages:

- Open consultations during which participants expressed their views on the issue discussed, namely on wildlife trade;
- Semi-open consultations with qualified human resources on purely technical issues;
- Filling out questionnaires which had been elaborated on the basis of the issues raised during the preparatory phase. Eight types of questionnaires, one for each type of stakeholder, were prepared;
- Compiling any statistical data available on the spot.

⁴ Map : WHO Data, 2001, updated by Rakotondrazafy 2007

Types of stakeholders consulted

Eight types of stakeholders, including traders, local populations and gendarmerie, participated in the survey. They were separated into five categories:

- i. Decentralized administrative authorities, including regions, districts, “*Fakontany*”⁵, and/or villages to which the belonged;
- ii. Decentralized departments represented by the *Circonscription de l’Environnement, des Eaux et Forêts*;
- iii. Security services including the gendarmerie and Customs;
- iv. Wildlife traders, as well as collectors or hunters
- v. Native populations in villages where wild species are collected.

The following tables describe the two ranges chosen for field work as well as the stakeholders consulted for each of them.

Table 1: East range and stakeholders consulted (Alaotra Mangoro and Atsinanana regions)

| EAST range | Stakeholders consulted | Number of stakeholders consulted |
|------------|-----------------------------|----------------------------------|
| Marozevo | Trader | 1 |
| Anjiro | Commune | 1 |
| | Collector | 1 |
| Moramanga | District | 1 |
| | CIREEFT | 1 |
| | Tribunal | 1 |
| | Gendarmerie | 1 |
| | Trader | 1 |
| | Collector | 1 |
| Andasibe | <i>Mitsinjo</i> Association | 1 |
| Tamatave | Region | 1 |
| | DREEFT | 1 |
| | Court | 1 |
| | Gendarmerie | 1 |
| | Customs | 1 |
| | Trader | 1 |

⁵ Article 2 of Decree 2004-299 of 3 March 2004 defines *Fokontany* as the basic administrative sub-division at the district level. *Fokontany* are established on the basis of the size of built-up areas which include hamlets, villages, territories or districts.

Table 2: West range and stakeholders consulted (Vakinankaratra and Amoron'i Mania regions)

| West range | Stakeholders consulted | Number of stakeholders consulted |
|------------|--|----------------------------------|
| Antsirabe | Region | 1 |
| | CIREEFT | 1 |
| | Court | 1 |
| | Gendarmerie | 1 |
| Ibity | Commune | 1 |
| Manandona | Commune | 1 |
| Ambositra | Region | 1 |
| | CIREEFT | 1 |
| | Court | 1 |
| | Gendarmerie | 1 |
| Ivato | Commune | 1 |
| | Gendarmerie | 1 |
| Antoetra | Commune | 1 |
| | Village association (<i>Vondron 'Olona Ifotony</i>) | 1 |
| | Local population | 1 |

This field work will, in part, form the basis of a cost-benefit analysis which should be undertaken when Madagascar finalizes its action plan for the implementation of CITES.

3. Results

3.1 Madagascar's wildlife trade policy context

3.1.1 Country profile

Environmental characteristics

With a surface area of around 590,000 km², Madagascar is the world's fourth largest island after Greenland, New Guinea and Borneo. It is situated 400 km east of Africa and separated from it by the Mozambique Channel. It was separated from the Gondwana supercontinent between 80 and 140 million years ago, which probably led to the complete isolation of its fauna and flora. The evolution of its fauna and flora has created an unmatched diversity of habitats, plant and animal species and even climates. Thus, Madagascar is called a "true microcontinent".

Madagascar and the nearby islands are situated at the centre of a mega-biodiversity region to the west of the Indian Ocean. With its remarkable mosaic of plant formations which are home to numerous animals, it is subdivided into five biogeographical regions: northern, central, eastern, western and southern. This biogeographical subdivision of the island reflects the diversity of the species which inhabit this minicontinent. Numerous Malagasy species are recognized worldwide as unique and endemic at the local, regional and international levels.

Around 14, 000 plant species (CIMAD, 2004) have been counted on the island, 85 % of which are endemic. These species, which belong to around 180 families and to 1, 600 genera of which 25 % are endemic, are of significant biological, ecological, medical, social and economic interest. A

considerable number of these species, including baobabs, euphorbia, orchids and aloes, are recognized as unique in the world.

As far as fauna is concerned, the number of invertebrate species living on the island is estimated at over 100,000: more than 140 species of freshwater fish have been recorded, including around 90 endemic species.

Over 250 species of amphibians, of which 99 % endemic (www.wildmadagascar.org), 283 species of birds of which less than 50 % are endemic and, lastly, over 300 species of reptiles, 85 % of which are endemic are found in Madagascar. On the other hand, Madagascar has relatively few mammals, but most of the species are unique to the country (for example, tenrecs and the “fosa”). There are currently around 80 species of lemurs, all of which are endemic.

The conservation of wildlife resources is not a new concept for Madagascar. Many protected areas had already been established in the country well before 1960, when Madagascar gained its independence.⁶ Madagascar was among the first countries in the world to establish a protected areas network. At first, natural reserves were part of the forests under State control, access to which was strictly prohibited except for scientific purposes. The aim of classification as a protected area is to protect the fauna and flora of certain regions. Several categories of protected areas are officially recognized in Madagascar, including integral natural reserves, natural parks, special reserves, classified forests, conservation sites, etc. To this day, the Malagasy State continues to show its commitment to preserve its natural resources (the Durban Vision). In 1960, the first text on the protection of wild species and the regulation of hunting of wild species was elaborated (Ordinance No. 60-126 of 3 October 1960). This already reflected the importance accorded to wildlife resources in the Malagasy environmental policy; since then the protection of biodiversity has been a major concern.

One of the concrete results of the environmental policy and another example of the continuity of this environmental protection strategy was the elaboration of the Malagasy Environment Charter outlining environmental programmes for five-year periods, which was launched in the beginning of the nineties. The protected areas network was constantly being expanded in an attempt to preserve the remaining fauna and flora. Although protected areas covered only 1,700,000 hectares in 2003⁷, political leaders, whose commitment is reflected, *inter alia*, in the Durban Vision, are planning a threefold increase in their surface area, including sea and coastal regions.

Social characteristics

Madagascar has 18.5 million inhabitants and its population growth rate is 2.8 % per year; 27 % of the population live in urban areas, 55 % have no access to drinking water or electricity, 30 % of adults over the age of 15 are illiterate, and 42 % are undernourished.⁸

Since 2006, with a Human Development Index (HDI) of 0.509, Madagascar has been one of the countries with a medium human development index. Poverty, however, remains a serious problem

⁶ Legislation governing integral natural reserves was established by Decree 66-242 ; they were formed from a network of natural parks established in 1927.

⁷ Country Strategy Paper and National Indicative Programme, European Union, 2007-2013

⁸ <http://www.statistiques-mondiales.com/> , December 2007

which affects the majority of the population: 70 % of the population live under the poverty threshold, with a daily income of less than a dollar a day.⁹

The country's ethnic diversity plays a paramount socio-economic role. Social stratification and regional differences also have an important place in socio-economic relations. Since the colonization period¹⁰, there has been a marked difference in the economic and social development between the highlands and the coastal areas. Urbanization and rural exodus have turned large cities and the job market into a melting pot of people. Therefore, these socio- anthropological data should be taken into account in the development strategy.

As far as the employment sector is concerned, 82 % of the working population are employed mainly in the primary sector; 4 % of the population were employed in the trade sector in 2004. Private businesses and small enterprises accounted for 77.9 %¹¹ of jobs, which demonstrates the importance of the informal sector. According to the data of the European Union, the labour force is relatively cheap (a worker's average salary reaches US\$ 36 against US\$44 in India).

According to the annual report on the implementation of the Strategic Poverty Reduction Paper¹², the rate of poverty reduction declined by 13 points between 2002 and 2006. Despite a more or less stable situation, 44 % of the urban population and 77 %¹³ of the rural population live below the poverty threshold. In urban areas poverty was reduced by 11 points whereas in rural areas it was reduced by 14 points. Poverty in Madagascar is more of a problem in rural area and its extent varies significantly among regions depending on socio-economic contexts, the size of households and the area of work of its working members.

There is a close link between environmental degradation and poverty in Madagascar. According to the data collected in 2003¹⁴, at least 50 % of state revenue depends directly on natural resources. Nine out of every ten jobs on the job market, for example, are found in sectors which are highly dependent on natural resources. Poor people, most of whom live in rural areas are highly dependent on the environmental context and suffer greatly when environmental conditions deteriorate.

Economic characteristics

As far as the economy is concerned, Madagascar's GDP growth slowed down slightly in 2005 and 2006 (4.7 % in 2006 against 5.3 % in 2005).

Wildlife trade is extensive, affects many sectors, including tourism, fishery, agriculture, livestock farming, forestry, medicine, and constitutes an economically sustainable resource for the State.

Decentralization and local governance of natural resources have advanced on two levels: the establishment of regions, and concrete steps towards the implementation of the Government's

⁹ Memorandum of the President of the International Development Association to the Executive Directors on a country assistance strategy for the Republic of Madagascar, World Bank, Report No. 27063-MAG, October 20, 2003

¹⁰ From 1896 to 1960

¹¹ Country Strategy Paper and National Indicative Programme, European Union, 2007-2013

¹² Annual Report on the Implementation of the Strategic Poverty Reduction Paper

¹³ Country Strategy Paper and National Indicative Programme, European Union, 2007-2013

¹⁴ Country Strategy Paper and National Indicative Programme, European Union, 2007-2013

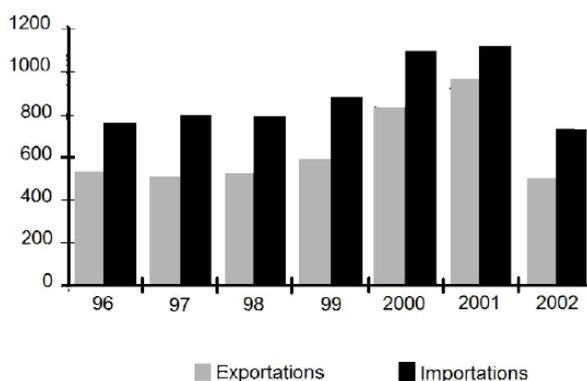
commitment to give ever more responsibilities in local development to the decentralized local communities (regions and communes). These responsibilities relate, *inter alia*, to local forestry governance and taxation, which are vital to the governance of natural resources. The transfer of responsibility for managing forests or other resources, such as lakes, is an approach to decentralized natural resource management, which has evolved in Madagascar over the past few years. It has proved successful in several areas, but its implementation should still be improved and built on and, undoubtedly, better linked to the other prerogatives of the communes.

The existence of a wide range of exploitation and exportation activities should be noted, but fishery and aquaculture are the most prosperous sectors as far as wildlife trade is concerned. Economic governance initiatives, such as regulating the exploitation of natural resources (precious wood) and ensuring their return to the formal sector, are currently being taken.

Integrating conservation into the national development remains difficult; in particular, significant efforts are still needed to establish a link between conservation and rural development. In addition, although the attitude of the population has improved, a part of it still feels kept away from Protected Areas, especially when conservation activities are not or not sufficiently accompanied by measures to promote local development (economic and social). However, a system for transferring management powers to local communities, called GELOSE or 'secure local management', has already been set up with a view to managing natural resources. New species of flora and fauna, in particular, marine species, are still being discovered, but a lack of resources prevents them from being studied and developed. This concerns, for example, the coral biodiversity and spanner crabs.

The figures below illustrate Madagascar's general economic characteristics and how they evolved between 1990 and 2003.

Figure 1: Export and import levels¹⁵ (USD millions)

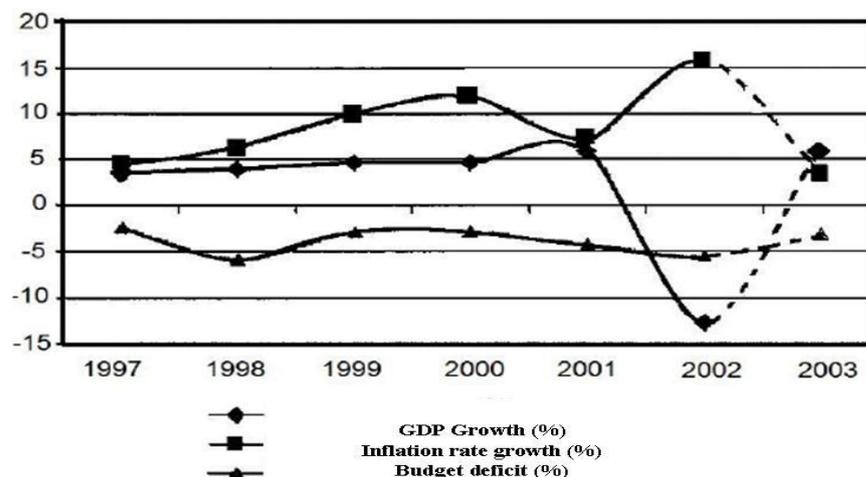


Like all countries, Madagascar trades goods and services at the international level. The above graph shows how the levels of Madagascar's exports and imports changed between 1996 and 2002. For every given year, the level of import exceeds the level of export.

Between 1996 and 1999, the level of import remained close to USD 800 million and the level of export close to USD 500 million. Then, in 2000 and 2001, trade levels went up, with exports reaching USD 900 million and imports exceeding USD 1,000 million. They declined following the crisis of 2002.

¹⁵ Source : Annual report on the implementation of the Strategic Poverty Reduction Paper, 2006

Figure 2: Madagascar's macroeconomic indicators for 1997-2003¹⁶



The above graph shows the improvements in Madagascar's macroeconomic indicators, namely the GDP, inflation rate and the budget deficit, between 1997 and 2003.

Between 1997 and 2001, the GDP gradually increased from 4 to 7 % and then plummeted to -13 % in 2002. In 2003, the GDP was back to its normal rate of about 5 %. On the other hand, the inflation rate continuously increased from 5 to 13 % between 1997 and 2000, then fell slightly in 2001 (8 %) and increased once again in 2002, reaching 16 %.

The budget deficit fluctuated from -2% to 4% between 1997 and 2001, then gradually improved in 2003 (-3%).

The decline in macroeconomic indicators is the result of a general strike in 2002, which brought all economic activities to a halt.

3.1.2 Current state of wildlife trade in the country

Wildlife trade plays an important role in national and international trade and is one of the activities which have generated income for the local and regional communities for several decades. To be able to sell their products on the local, regional and sometimes even national markets, a number of families and households in rural areas are highly dependent on hunting and harvesting. Other stakeholders such as traders specialized in fauna and flora, economic operators and exporters enter into play when they sell off some of their products at the national and international levels. In its report (Country Strategy Paper and National Indicative Programme for 2007-2013) and in its exchanges with Madagascar in 2005, the European Community noted that crustaceans accounted for 20 % and vanilla for 3 % of all exports.

Wildlife resources have been vigorously exploited since the colonial period. Some sectors, such as the exploitation of crocodiles and wood, go back several decades. Between 1940 and 1950¹⁷, crocodiles were hunted down in large numbers for trade in crocodile skins. Towards

¹⁶ Source : Annual report on the implementation of the Strategic Poverty Reduction Paper, 2006

¹⁷ Behra, O & Lippai, C. 2003, *Crocodylus niloticus*, In *The Natural History of Madagascar*: S.M. Goodman and J.P. Benstead, 2003, The University of Chicago Press, Chicago and London: pp.1001-1005

the end of the forties, around 1,000 skins were supplied to the market per month. The exploitation of crocodiles was not limited to skins but also involved collecting eggs. Towards the beginning of the fifties, collectors managed to supply the colonial administration with up to 7,000 eggs in three weeks. As a result, the crocodile population suffered severely from over-exploitation. In the seventies and eighties, wild crocodile populations began to recover by colonizing new areas. At present, they are classified by IUCN as being of “least concern” and are protected by the Malagasy legislation¹⁸ and by CITES¹⁹, but continue to serve the needs of rural populations in some regions. However, neither its inclusion in Appendix II of CITES, nor the protection accorded by the national legislation can guarantee its sustainable management at the national level. Following the recommendations of the CITES Permanent Committee, the Malagasy Government recently approved an action plan for crocodile management in Madagascar. This management plan could serve as a model for the elaboration of management plans for other species listed in the CITES Appendices.

In addition to crocodiles, several herpetological species are collected for the international market. The export figures²⁰ available before and during the eighties show a relatively low level of export. Moreover, there was a true “explosion” in the quantity of live animals exported for international trade between 1985 and 1990. Trade in species of chameleons and lizards was very profitable for some traders. Official data on the *Chamaeleo* and *Phelsuma* species were included in the Review on Significant Trade, which was conducted by the Animals Committee (pursuant to Resolution Conf.8.9). In 1994, the Standing Committee advised Parties against further import of chameleons and geckos from Madagascar, with the exception of eight species²¹ (four for each genus) with a respective quota of 2,000 for each one). Notwithstanding this recommendation, between 1990 and 1999, Madagascar alone managed to export over 655,000 *Phelsuma* individuals (represented by over 17 species) and more than 283,000 chameleons²² (*Furcifer* and *Calumma* [formerly *Chamaeleo*] genera, represented by over 28 species).

Around 1990, the export of amphibians was mostly centred round *Mantella aurantiaca*²³. Between 1990 and 1999, more than 87, 000 individuals of this species were exported (it was included in Appendix II in 1995; the other species of the *Mantella* genus were included in 2000). After the decision of the CITES Standing Committee to apply a quota of 2,000 individuals to chameleons and geckos, traders started exploiting other species. The *Mantella* species also started being collected and exported. Between 1997 and 1999, ten *Mantella* species were on the market; between 2000 and 2006, their number increased to 14. The data showed that almost 280,000 *Mantella* individuals were exported between 1995 and 2005; around 180,000 individuals were sold between 2000 and 2005. There was a similar increase in the export of other species of amphibians (from the *Dyscophus* genus, including *D. antongili* which is listed in Appendix I, and *Scaphiophryne*) as well as *Uroplatus* geckos.

¹⁸ Decree 2005-400 of 13 June 2006 classifying fauna into protected, harmful and game animals

¹⁹ CITES Appendix II

²⁰ WCMC Data, 2007

²¹ *Phelsuma* geckos : *Phelsuma laticauda*, *P. lineata*, *P. madagascariensis*, *P. quadriocellata* ; Chameleons : *Chamaeleo pardalis*, *C. verrucosus*, *C. lateralis* and *C. oustaleti*

²² WCMC Data, 2007

²³ See Figure 3

The available statistical data concerning the sales rate of each product at the national or international level are limited to the FOB price registered by exporters and used to calculate taxes and royalties. Many sectors, however, were developed for commercial purposes and affected an increasing number of species of different origins: forest, non- forest, fishing. They include such areas as decoration, fashion, medicine, collection of rare species, domestic animals, practical items (furniture, clothes, shoes), food, etc. There is a wide range of exploitation activities and their scope depends on the sector. According to some sources of information, precious wood, which is not yet listed in the CITES Appendices, is exploited in the north; crocodiles - in the middle west (CITES Appendix II on the basis of the ranching system); radiated tortoises - in the south (which is illegal because the tortoises are listed in CITES Appendix I); all over the eastern part unique and rare species are exploited as domestic animals; and many other promising larger sectors have a tangible economic impact at the regional and/or national level.

At present, there is a growing demand in the formal as well as informal sector. Both sectors export wild species. However, exporters of forest, non-forest and fishing products who already follow the regulations established by control institutions, produce the largest volume of export. The informal sector affects grassroots communities, hunters, collectors and re-sellers at the local and regional levels.

Despite the uniqueness of the Malagasy biodiversity, some resources can be found in other countries and can even be exploited. One example is the Nile crocodile which is also exploited in some African countries and certain species of green geckos which are scattered over the nearby islands. This also applies to the exploitation of marine resources.

Since wildlife exports play a paramount role in trade, most measures seek to: regulate these exports (cash inflows, payment of royalties, refunds²⁴); ensure compliance with the standards established by importers and different foreign communities (health standards, environmental standards...); ensure respect for findings on non-detrimental trade and other CITES criteria; and protect the different sectors. The objective is to ensure a more or less lasting approach, for example by developing an action plan.

Table 3: Proceeds and royalties from the export of animal and plant products between 2001 to 2006 (in ariary)

| | PROCEEDS | | ROYALTIES | |
|-------------|--------------------|------------------|-----------------|-----------------|
| | FAUNA | FLORA | FAUNA | FLORA |
| 2001 | 1, 062, 334,440,00 | 240,001,413,20 | 36, 972, 008,00 | 12, 034,944,20 |
| 2002 | 1, 290, 693,493,00 | 588, 660, 281,00 | 48, 957, 441,80 | 16, 261, 089,20 |
| 2003 | 1, 507, 123,615,80 | 583,732, 103,20 | 55, 757 850,20 | 6, 810, 722,00 |
| 2004 | 1, 903, 232,268,00 | 401, 434, 205,02 | 83, 225, 988,80 | 15, 258, 083,40 |
| 2005 | 1, 245,230, 887,10 | 513, 559, 661,10 | 47, 462, 045,90 | 21, 930, 611,20 |
| 2006 | 1, 716, 218,095,60 | 187, 455, 200,00 | 62, 923, 732,60 | 8, 730, 913,00 |

USD 1 = MGA 1,700 (Malagasy ariary)

This table shows the proceeds and royalties from the export of animal and plant products between 2001 and 2006. During this period, the total proceeds reached MGA 7,479,601 and royalties

²⁴ Included in the terms of reference of traders

reached MGA 372,263,733,3. Fauna is found to be more profitable from the economic point of view than flora. Royalties vary depending on the way in which species are collected: they are of the order of 1 to 4 % of the proceeds and are paid to the National Forest Fund:

- 4 % for species collected in the wild;
- 2 % for ranching species;
- 1 % for farming species;

On average, the annual proceeds from animal products reach MGA 1,246,600,318,74 and from plant products MGA 419,140,477,253. Naturally, wildlife trade generates proceeds for all stakeholders; however, traders get the largest share.

In addition, it should also be pointed out that some companies in Madagascar's tax-free zone import skins of reptiles which are not endemic (*Varanus niloticus*, *Alligator mississippiensis*, *Crocodilus fuscus*, etc.) and transform them into finished products for re-export. Since these products are not local, however, this type of transaction generates no royalties for the country.

Table 4: Proceeds and royalties from the export of forest plant products between 2001 and 2007 (in ariary)

| Year | Total value AR | Royalties received (MGA) |
|-------------|-----------------------|---------------------------------|
| 2001 | 7, 695, 560, 041 | 121, 004, 132 |
| 2002 | 8, 329, 053, 349 | 69, 552, 448 |
| 2003 | 7, 773, 643, 292 | 108, 299, 369 |
| 2004 | 12, 674, 716, 064 | 184, 865, 741 |
| 2005 | 14, 859, 772, 985 | 222, 559, 881 |
| 2006 | 24, 904, 883, 399 | 361, 934, 968 |
| 2007 | 24, 065, 571, 817 | 349, 832, 990 |

Source : *Direction de la Valorisation des Ressources Naturelles (DVRN/DGEEF)* (Department of Natural Resources/DGEEF)

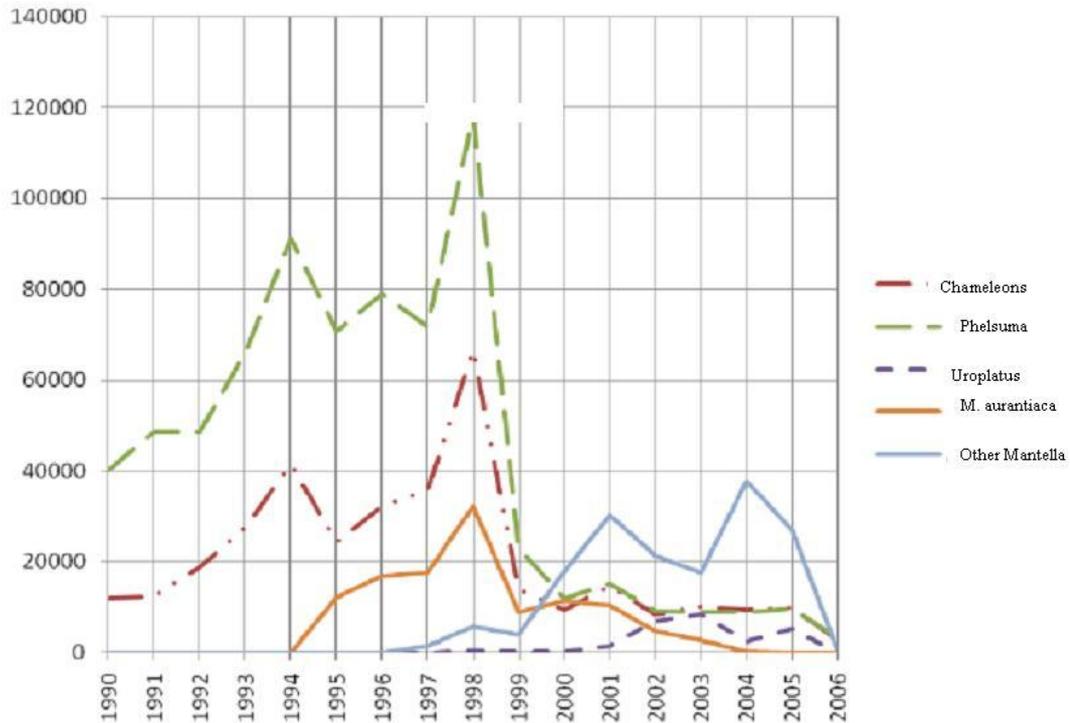
From the economic point of view, proceeds from the export of forest products exceed those from the export of products made from CITES-listed plant and animal species. The average annual proceeds from the export of forestry products reach MGA 12,872,933,170.

Average annual royalties on forestry products reach MGA 193,094,072,5, which constitutes 65 % of the FFN.

It should be pointed out that exported forestry products include: rosewood, pinewood, ordinary wood, ebony wood, medicinal plants, handcrafted products and finished products.

The figures below show the changes in and the structure of trade in some wild species of fauna and flora.

Figure 3: Changes in wildlife trade (fauna)²⁵ (chameleons, *Phelsuma*, *Uroplatus*, *M. aurantiaca*, other *Mantella*)

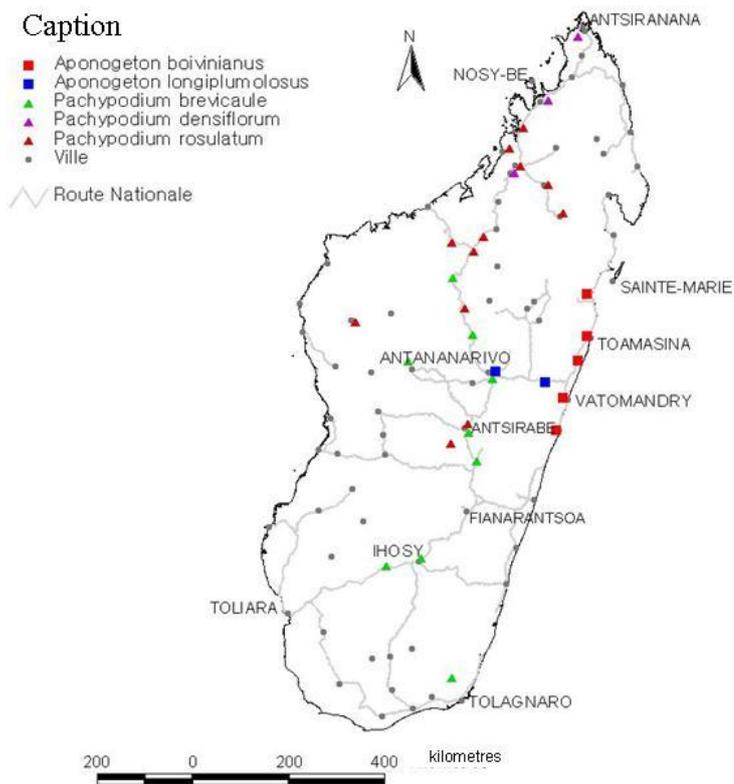


This graph shows that the volume of trade in the above-mentioned species of fauna, in particular *Phelsuma*, chameleons and *Mantella aurantiaca* increased continuously. The volume of trade in chameleons and *Phelsuma*s peaked in 1998, after which the rate of exploitation fell following the introduction of a moratorium on chameleons. As can be seen, trade activities then focused on other species: a steady decline in the number of *Mantella aurantiaca* was accompanied by an increase in the number of other *Mantella*.

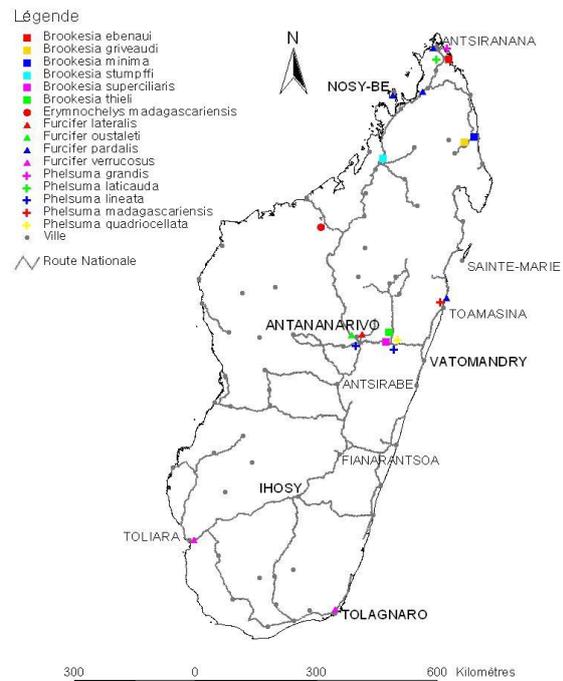
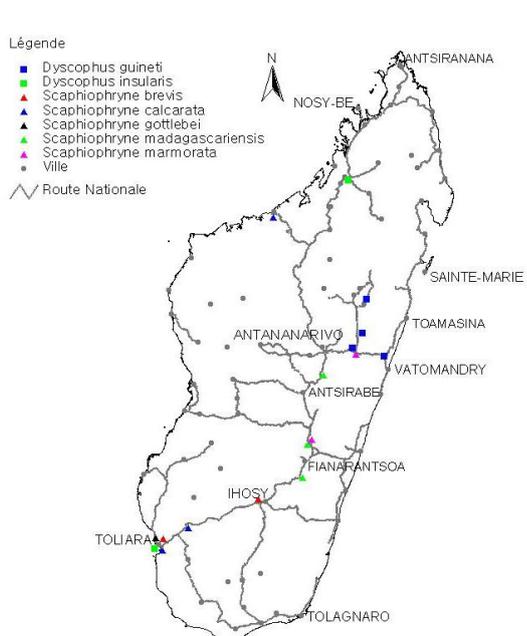
A note on the review of significant trade in *Mantella* spp. AC23. Doc. 8.4 (Geneva April 2008): In its recommendations, the Animals Committee categorises trade in various *Mantella* species of Madagascar as “of least concern” and eliminates them from the review; it categorises trade in *Mantella crocea*, *Mantella expectata*, *Mantella milotympanum*, and *Mantella viridis* as “of possible concern” and requests additional data on the species in order to reconsider their status at the next meeting.

²⁵ Source : WCMC, 2007

Map 2 : Collection sites of species of wild flora and fauna



Map A: Collection sites of some plant species



Map B: Collection sites of amphibians

Map C: Collection sites of reptiles

Table 5: Changes in the volume of export of several species of flora.

Table on the export of several widely marketed species²⁶ (flora)

| Species | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|
| <i>Aponogeton fenestralis</i> | 61,250 | 14,200 | 8,800 | 20,864 | 30,220 | 17,150 | 11,755 |
| <i>Aponogeton henkelianus</i> | 13,710 | 18,850 | 21,665 | 17,470 | 25,960 | 23,000 | 9,600 |
| <i>Euphorbia itremensis</i> | 0 | 0 | 0 | 0 | 829 | 543 | 225 |
| <i>Pachypodium brevicaule</i> | 207 | 490 | 0 | 505 | 1,814 | 1,279 | 1,628 |
| <i>Pachypodium densiflorum</i> | 33 | 235 | 3 | 514 | 942 | 1,825 | 1,191 |

These species have been chosen because they are marketed in larger numbers than other plant species. In addition, they are in the highest demand; they are exported by almost all traders who specialize in flora.

3.1.3 Driving forces behind trade, and the value chain

Driving forces behind trade: offer and demand, the specificity of the Malagasy species, regulations, local needs and poverty

a) Offer and demand

First of all, there is a demand from importers on the international arena. Although CITES-listed species are subject to export quotas, given the increase in the number of species involved in international transactions between 1990 and 2006 (DGEEF), the interest of importers can be explained by the fact that they turn to species which are subject to fewer trade regulations.

Moreover, as a result of illegal trafficking, there is a growing number of buyers at the international level: for example, numerous requests for illicit sale of protected species, from which fauna suffers the most, can be found on the Internet. This acts as a stimulant to wildlife trade.

b) Specificity of the Malagasy species

It is important to remember that the rarity, specificity, endemism and particularity of the island's biodiversity prompt ever greater interest among collectors. This is an important marketing factor for Madagascar, which should be exploited. A highly regulated export system would enable the country to generate considerably more profits.

c) Regulations

The prohibition to export rosewood and ebony wood²⁷, which are not listed by CITES but should be mentioned in the review, the quotas²⁸ which, according to traders, are very small considering the number of species found in the field, for example chameleons, and other measures adopted with a view to managing and regulating the results of past transactions, have boosted the demand for other

²⁶ DGEEF database, 2007

²⁷ Decree No. 11 832/2000 of 4 April 2000 prohibiting the export of rosewood and ebony wood.

²⁸ Assigned in a discretionary manner in 2001, 2002 and distributed late in comparison to the annual practice.

species. It should be pointed out that the inclusion of certain species in Appendix I has led to illegal trade, for example in tortoises (the only chameleon species in Appendix I is *Brookesia perarmata*). It cannot be denied that the economic value of marketable species prompts traders to seek other products which can meet the new demand; so they will opt for other species and establish new sectors because the exported species are subject to quotas that are not distributed in time.

d) Local needs and poverty

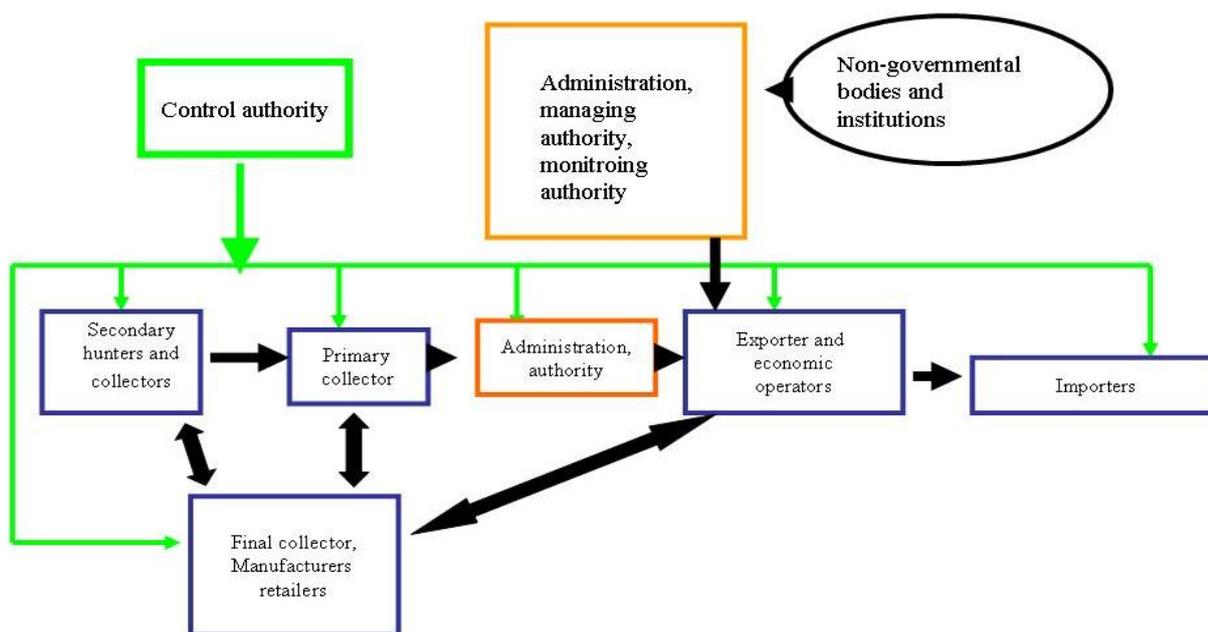
At present, a lack of data makes it difficult to follow changes in the national trade. According to the authors' own observations, however, trade is driven above all by a demand for food, even though there are some exceptions, such as leather goods made of crocodile and snake skins. Although these species are protected by the legislation, craftsmen earn their living by transforming and selling these products, which means that this is a fairly profitable sector and one about which very little is known. Especially in the case of fauna, there are still few buyers at the national level who are interested in rearing wild species as domestic animals, with the exception of radiated tortoises. On the other hand, as far as flora is concerned, the species sold locally are generally decorative (orchids, succulents) and medicinal (*Prunus africana*, *Centella asiatica*, *Catharantus roseus*) plants.

The same is true for fishery resources: fish farms are there to supply towns and regions with foodstuffs. Many species are especially affected: marine and freshwater crustaceans (mangrove crabs, lobsters, prawns, crawfish), molluscs (oysters, octopuses, calamari, mussels...), fish (rays, sharks, cartilaginous fish...)

Furthermore, the high level of poverty among the population, in particular in rural areas, is one of the factors that promote wildlife trade. In order to meet their daily needs, they end up exploiting maximum resources for minimal profits.

Value chain

Diagram 1: General flowchart of the chain of trade in Madagascar.



This diagram was drawn up on the basis of consultations with the above-mentioned wildlife trade stakeholders.

Hunters or collectors of wild species are found at the beginning of the chain. They are the inhabitants of the locality or area where the species are hunted or collected. In Madagascar, they are mostly self-employed; one collector can supply several exporters. There is a certain loyalty between collectors and exporters or economic operators. Collectors focus in particular on one or several species in their collection zone and are more or less aware of the CITES standards because traders impose certain conditions on the merchandize before accepting it.

There can be intermediaries between traders and these collectors; these are secondary collectors who “buy to re-sell”.

It should be pointed out, however, that collected products are not intended exclusively for the international market. At the local level, craftsmen can be the first buyers, in particular of crocodile skins. The raw materials will be transformed into a finished product for the local and, possibly, international markets.

3.2 Policy content and implementation

3.2.1 Background

Figure 4: Evolution of the Malagasy wildlife trade policy



Environmental policy trends in Madagascar

The Malagasy environmental policy incorporates legislative and regulatory texts relating to environmental protection, in-situ and ex-situ conservation, secure local management and sustainable development. Aware of the serious problems arising from the environmental degradation and the loss of biodiversity related to the economic situation and poverty, the Malagasy government elaborated, in 1989, its National Environmental Action Plan (PNAE) with the support of the World Bank, international agencies and non-governmental organizations. Thus, Law No.90-033 of 21 October 1990 on the Malagasy Environment Charter was adopted. This law constitutes the general framework for the implementation of the national environmental policy and includes the objectives fixed, the strategy to be adopted, and three five-year environmental programmes for a period of 15 years.

1) Environmental Programme I (PEI): the goal of the first phase of PNAE (1991-1996) was to integrate the most important activities related to the environment into one single programme. The implementation of phase 1 consists of several segments, each of which corresponds to a specific need, including establishing an institutional framework and developing a methodological, procedural, financial and technical approach.

2) Environmental Programme II (PEII): the second phase of the programme began in 1997 in the context of decentralisation (Law No.93-005 of 26 January 1994 on the general trend of the decentralization policy) and provincial autonomy (mentioned in the old Constitution of 1998, Law No.2000-016 of 29 August 2000 which establishes a framework for managing issues related to autonomous provinces); the environmental and resource management strategy (Law No.96-025 of 30 September 1996 on the local management of renewable natural resources, Law No.97-107 of 18 August 1997 on the adoption of a forestry policy) is based on the development of a regional and local approach to the protection and use of biodiversity and other natural resources. Greater involvement of stakeholders will enable this phase to have a concrete impact. At the same time, actions are accompanied by the development of tools and measures which are essential for proper environmental management. The activities of the National Environmental Action Plan are conducted in synergy with rural development efforts and rural growth centre activities. The conservation/development principle is based on actions which have a concrete impact on the reduction of the anthropogenic pressure on the environment and natural resources. Conservation and sustainable management of biodiversity resources will have to become a vital part of development, which implies the active participation and accountability of local stakeholders.

Thus, biodiversity resource management involves several components, each of which has specific objectives:

- Protected areas network, managed by ANGAP (National association for the management of protected areas): developing a management strategy by establishing a national network which incorporates the different types of ecosystems in its most recent trends;
- Marine and coastal environment: developing and testing the implementation of an integrated coastal area management policy;
- Multiple-use forest ecosystem management (ESFUM): this is a programme supported by the decentralized and devolved services and aimed at preserving the economic, ecological and social benefits of forestry resources;
- Local Natural Resource Management and Land Tenure Security (GELOSE): transferring renewable natural resource management to local communities and ensuring land tenure security, which is limited to a land inventory based on reporting and a simplified, consensual and transparent survey accompanied by a land record kept by a land management unit;
- Support to regional environmental management and spatial approach (AGERAS) and its contribution through concerted strategies aimed at ensuring sustainable natural and human resource management through the spatial integration of development efforts into these strategies.
- The programme on environmental research and sustainable development of biodiversity seeks to turn applied research into an important tool for the sustainable development of natural resources. It also seeks to create a framework for the protection of the rights of access to these resources in order to meet the goals of the Convention on Biological Diversity by ensuring the technical coordination of activities on the elaboration of a national biodiversity strategy and creating accompanying measures for the economic development of natural resources.
- Various policies provided for in the “Environmental Policies, Strategies and Instruments, Procedures and Legislation” component, which led to Decree 99-954 of 12 December 1999 on the Environmental Impact Assessment Legislation (MECIE) and Environmental Impact Assessment (EIA) studies; the aim is to incorporate the requirements of rational environmental management into production activities in order to achieve sustainable development;

- The Environmental Information System is a decision-making tool, which provides the data required for actions to be taken and for the ecological monitoring of biological diversity.

3) Environmental Programme III (PE 3) which began in 2002 and consists in various stakeholders tackling environmental procedures and management and sustainable biodiversity management. In the first phase of the Environmental Action Plan, in response to deforestation and biodiversity loss, the “Biodiversity” component focused on the issue of “protection” and on ensuring this protection through the establishment of Protected Areas, accompanied by integrated development of their peripheral areas. In the second phase of the PNAE implementation (1997-2001), in addition to the initial objective to reverse the trend of environmental degradation, other equally important objectives were: ensuring sustainable utilization of natural resources and creating all the necessary conditions to ensure that environmental considerations constitute an integral part of the country’s macroeconomic and sectoral management.

Integrating CITES into the Malagasy environmental policy

Madagascar’s accession to CITES in 1975 already testified to the fact that the Malagasy State had recognized the importance of international wildlife trade. On one hand, laws governing the implementation of this policy were adopted; on the other, measures to ensure their correct application were taken. These are, first and foremost, specific measures which are often aimed at managing the exploitation of particular species. In most cases, they seek to regulate hunting and the export of wildlife resources on the Malagasy territory and to prevent over-exploitation.

Below is a general outline of the major stages in the implementation of CITES policies:

- Accession to CITES

Madagascar signed the Convention in Washington in 1975. This initiative was supported by Ordinance 75-014 of 5 August 1975 concerning the ratification of this Convention. Thus, various laws and regulations²⁹ were adopted in order to harmonize and regulate wildlife trade. Madagascar’s accession to CITES was immediately followed up by the inclusion of certain species in the CITES Appendices.

- The inclusion in CITES Appendix I of tortoises (Order Testudines) and lemurs of Madagascar³⁰.

Tortoises (Order Testudines) were being protected well before the ratification of CITES by Madagascar. The State was already becoming aware of the importance of these species, which explains the promulgation of decrees in the sixties, designed to protect them. These measures sought above all to protect tortoises from commercial hunting and export by ensuring that these activities would not be detrimental to their survival. The same applies to lemurs, the possession and hunting of which had been prohibited by a decree before they were included in the CITES Appendices.

- The inclusion of the crocodiles of Madagascar in CITES Appendix II³¹

²⁹ See section 3.2.2 Content

³⁰ Decree 77-276 of 26 August 1980 on the publication of revised CITES Appendices

³¹ Decree 760-80 of 25 February 1980 on the application of CITES Appendix I; research in 1980 into tortoises and crocodiles

As far as *Crocodylus niloticus* is concerned, even though this species is not endemic to Madagascar, the measures adopted at the international level have led the Malagasy State to accept its inclusion in CITES Appendix I (after the ratification of the Convention). The adoption of resolution 5.16 of CoP5 in 1985, however, made it possible for the Malagasy crocodile population to be transferred to CITES Appendix II.

Madagascar benefited from this specific resolution together with several African States parties to CITES. Madagascar could take advantage of the export quota and involve rural populations in a programme on sustainable resource utilization in certain regions of the island, such as Besalampy (collection of eggs) and in the development of a ranching system.

This involvement is in line with various initiatives taken by Madagascar, such as the transfer of management (GELOSE*, GCF*, etc), and with PRD* and PCD*.

The 1998 moratorium and the inclusion of chameleon and Phelsuma species of Madagascar in Appendix II

This measure was dictated by the international community as a result of excessive exports of chameleon species and green lizards during the nineties. After their inclusion in Appendix II, only eight species were authorized for export. Resolution Conf. 12.8 on the Review of Significant Trade in specimens of Appendix-II species, which was adopted by CoP12 and which resulted from and repealed resolution 8.9., empowers CITES Committees to implement this measure. The Review of Significant Trade is a mechanism for remedial action when there is reason to believe that Appendix-II species are being traded at significant levels without adequate implementation of article IV of the Convention. If implemented correctly, the review acts as a safety net by ensuring that species listed in Appendix II do not decline.

- The 2002 moratorium

Owing to the country's political context³², a competent Malagasy authority decided to suspend all wildlife export activities. This domestic initiative was taken in order to limit abuses in this sector. The activities recommenced only in 2003.

- CITES recovery plan for Madagascar

CITES launched some remedial initiatives (with the technical support of TRAFFIC International) to help the Malagasy authorities to implement the Convention (2002-2003). More concretely, the initiatives were part of the Review of Significant Trade which was implemented for the first time in a country. Thus, an action plan was introduced, which was made up of five components related to the structure of the national policy and legislation, the organization and structure of the Malagasy CITES (management and administration) and scientific issues and monitoring.

- Establishment of an operational Scientific Authority

Before the recovery period 2002-2003, technical and scientific support was provided by a non-operational Scientific Authority made up of experts who were consulted for opinions in certain cases. In view of the situation of trade in certain wildlife species and the findings of the Review of Significant Trade in Madagascar, after this period Scientific Authorities were officially designated and made up of representatives of the Department of Animal Biology and the Department of Plant

³² Political crisis which led to the existence of two governments at the same time

Biology and Ecology of the Faculty of Sciences of the University of Antananarivo. Their roles and tasks are described in official documents³³.

- Adoption of a specific law on wildlife trade³⁴

The elaboration of a legislative text on international wildlife trade reflects Madagascar's intention to regulate and update the measures adopted after the ratification of CITES. Wildlife trade procedures and the roles of major stakeholders are based on this law; it was revised in accordance with the recommendations of legal advisers and the support of the legislative division of the CITES Secretariat.

The law was revised on the basis of recommendations of the reviews conducted by legal advisers or international organizations (TRAFFIC, etc.), or using the available information, data or reports, always under the supervision of the CITES Secretariat.

- Revision of Appendix II which led to the inclusion of new Malagasy species³⁵

Numerous species have been included in the CITES Appendices since the ratification of the Convention. The implementation of the action plan has recently made it possible to include such species as: *Uroplatus*, *Mantella* or *Brookesia*, the status of which was revised in order to prevent over-exploitation and to help protect them from the phenomenal losses in their natural habitat.

- Classification of the Malagasy animals on the basis of their national conservation status³⁶

The species of the Malagasy fauna have been classified into three categories, namely protected animals, harmful animals and game. The classification of each species is in conformity with the status accorded to it by CITES and IUCN.

- Creation of a procedures manual³⁷

The manual was elaborated by DGEEF in collaboration with the French Cooperation Agency and JARIALA and constitutes a framework for the implementation of CITES in Madagascar. On one hand, this document defines the legal and regulatory framework for wildlife trade; on the other hand, it identifies the various stakeholders concerned³⁸ and the procedures to be followed.

³³ Decree 3032/2003 of 13 February 2003 establishing and assigning the roles and tasks of Scientific Authorities

³⁴ Law 2005-018 of 17 October 2005 on international wildlife trade and its implementing decree 2006-098 of 31 January 2006 on the publication of CITES Appendices

³⁵ Decree 2006-098 31 January 2006 on the publication of the CITES Appendices

³⁶ Decree 2006-400 of 13 June 2006 which classifies fauna into protected animals, harmful animals and game

³⁷ December 2006

³⁸ Management Authority, forestry administration, permanent secretariat, Customs, traders, collectors...

3.2.2 Content

i. Before 1975: a policy based on local management of species

During this period, wild species were regarded as objects of hunting and harvesting. Thus, the following texts were used to justify all commercial transactions:

- Order 2023/1959 of 14 May 1959 imposing royalties on permits to hunt butterflies and on the special permit for tourists to hunt butterflies;
- Ordinance 60-126 of 3 October 1960 aimed at protecting fauna and regulating hunting and fishing on the Malagasy territory with its application and implementing decrees;
- Ordinance 60 -128 of 3 October 1960 concerning measures against violations of forestry, hunting, fishing and environmental protection legislation;
- Decree 61-093 of 16 February 1961 regulating commercial hunting;
- Decree 61-096 of 16 February 1961 dividing birds and wild animals into three categories;

Order 1316/1961 of 13 July 1961 imposing royalties on commercial hunting permits, the authorization to collect and export specimens of flora and fauna: official report on the existence of trade in certain species;

- Decree 69-085 of 25 February 1969 regulating butterfly hunting;
- Law 71-006 of 30 June 1971 establishing the right of exit for animals and orchids.

ii. Between 1975 and 1990: Convention start-up period

After Madagascar ratified the CITES Convention (by Ordinance No.75-014 of 5 August 1975 which entered into force on 18 November 1975), the trade situation changed. Animal and plant species were recognized as having a real economic value. For this reason, the State began issuing orders concerning the royalties to be paid by traders. The texts which existed and regulated wildlife trade at the time justified this reality, and were reinforced by:

- Ordinance No.86-013 of 17 September 1986 on phytosanitary legislation, plant protection and support for the export of plants in Madagascar;
- Ordinance No.88-015 of 1 September 1988 concerning the export policy;
- Ordinance 75-014 of 5 August 1975 concerning the ratification of CITES;
- Decree 77-276 of 26 August 1977 concerning the publication of revised CITES Appendices (fauna and flora)
- Ordinance 82-029 of 6 November 1982 concerning measures to safeguard, protect and preserve the national patrimony;
- Decree 83-108 of 31 March 1983 containing the full list of wild animals threatened with extinction;
- Decree 84-445 of 14 December 1984 on the Malagasy conservation and sustainable development strategy and the national commission on conservation for development;

- Decree 88-243 of 15 June 1988 amending articles 1 and 2 of Decree 61-096;
- Order 2915/87 of 30 June 1987 on the management of the exploitation of secondary forestry products: medicinal plants and industrial forestry plants;
- Order 760-80 of 25 February 1980 concerning the application of CITES Appendix I and the research on tortoises and crocodiles, conducted in 1980;
- Order 1046-86 of 1 March 1986 imposing royalties on commercial hunting permits, the authorization to collect and export specimens of flora and fauna.

No other more specific texts on wildlife trade in general, and on the Convention in particular have been elaborated.

These different texts, however, were only partially applied. The CITES regulations were poorly understood and only partially implemented.

iii. Between 1990 and 2002: a period influenced by the environmental policy

The year 1990 was marked by the entry into force of the environmental policy based on Law No. 90-033 of 21 October 1990 on the Malagasy Environment Charter, amended by Law No.97-012 of 6 June 1997 and Law No. 2004-015 of 19 August 2007 with its implementing and application decrees.

Since that period conservation activities were conducted on the entire national territory. At the time, the new laws and environmental policies referred only in passing to wildlife trade.

During that period, owing to the expansion of the conservation principle promoted by the environmentalists, wild species subject to trade were acquiring increasing economic value and becoming expensive both at the national and international level.

In addition, the following environmental texts formed the legislative framework for trade:

- Law 91-008 of 5 August 1991 on animal life, which seeks to regulate the import and export of animals, and products and foodstuffs of animal origin;
- Ordinance 93-022 of 4 May 1993 regulating fishing and aquaculture with its implementing decrees;
- Law 94-007 of 26 April 1994 concerning the powers, competences and resources of decentralized territorial communities in setting refunds and levies;
- Law 95-013 of 9 August 1995 concerning the Convention on Biological Diversity;
- Law 96-025 of 30 September 1995 on the local management of renewable natural resources, including fauna and flora;
- Law 97-017 of 8 August 1997 on the protection of sustainable management of forestry resources with its various decrees, including Decree No. 97-1200 of 2 October 1997 on the adoption of the Malagasy forestry policy, Decree No. 98-781 of 16 September 1998 establishing general conditions for the application of Law No.97-017 of 18 August 1997 amending the forestry legislation, Decree No.2005-013 of 11

January 2005 concerning the application of Law No. 2001-005 of 11 February 2003 on the Protected Areas Management Code;

- Decree No. 99-954 of 15 December 1999, amended by Decree No.2004-167 of 3 February 2004 on the Environmental Impact Assessment Legislation (MECIE) which requires all investment projects to be subjected to an environmental impact assessment study;
- Order No.12702/2000 of the Ministry of Water and Forests, dated 20 November 2000, in application of provisions of articles 22 and 25 of Decree No. 98-782 of 16 September 1998 on the forest utilization regime accompanied by a development plan within the time limits stipulated in article 8 of Decree No. 98-782 of 16 September 1998;
- Order No. 12704/2000 of the Ministry of Water and Forests, dated 20 November 2000 prohibiting all activities involving the collection of wood resources in sensitive areas;
- Decree No. 99-954 of 15 December 1999 amended by Decree 2000-167 of 3 February 2004 on the Environmental Impact Assessment Legislation (MECIE) which requires all investment projects to be subjected to an environmental impact assessment study;
- Law No. 2001-005 of 11 February 2001 on the Protected Areas Management Code, article 44 of which criminalizes the sale of wild animals from any of the country's Protected Areas;
- Ministerial Order No. 6833/2001- MEF/SG/DGEF of 28 June 2001 concerning forestry royalties on commercial hunting permits and the authorization to collect and export specimens of fauna and flora.

Nevertheless, the situation of wildlife trade continued to attract little attention and was aggravated by the environmental policy of that period.

iv. 2002: Moratorium on the export of species listed in the CITES Appendices, as a result of the political situation in Madagascar.

In 2002, Madagascar went through a political crisis which lasted six months and resulted in the suspension of all administrative activities. Aware that the situation could be exploited, and unable to control the exit from and entry to the territory, the Ministry took the decision to suspend all international trade in species of fauna and flora of Madagascar. This measure was presented at the 18th meeting of the Animal Committee in San Jose, Costa Rica (8-12 April 2002).

vi. After 2003: Policy reform

In accordance with the recommendations of the CITES Animals and Plants Committees, a Review of Significant Trade at the national level was initiated by Madagascar and led to the elaboration of an action plan. In the course of this review, all the stakeholders involved in wildlife trade (CITES and non-CITES, excluding retailers of fishery resources, vanilla and other subsistence products such as sugar, coffee, etc...) were consulted and informed of the review objectives and the severity of the situation. The review was concluded with a national workshop held in 2003, during which

five working groups were set up to discuss the following major issues: national policy, legislation and regulations related to the collection of and trade in wild species, scientific contribution, operational and administrative procedures and the enforcement of controls. This workshop made it possible to elaborate a CITES action plan for Madagascar, which was approved by the Malagasy Government and was presented to the Conference of the Parties (CoP 13). This is now an official working document; its assessments and expected results are addressed in reports submitted regularly to the CITES technical committees.

During their joint meeting in Geneva on 19 April 2008, the CITES technical committees recommended that Madagascar should no longer have to report on the review of the country's significant trade. Parties assessed the process; reviews based on species would still need to be submitted.

This was followed by different texts on the implementation of CITES, including:

- Ministerial Order No.3032 of 13 February 2003 which establishes and assigns the roles and tasks of the CITES Scientific Authorities in Madagascar;
 - Law No. 2005-018 of 17 October 2005 on international trade in species of wild fauna and flora, designed to bring the Malagasy legislation into line with CITES;
 - Decree No.2006-097 of 31 January 2006 establishing the modalities of application of Law No. 2005-018 of 17 October 2005 on international trade in species of wild fauna and flora;
 - Decree 2006-098 of 31 January 2006 on the publication of the revised CITES Appendices;
- Decree 2006-400 of 13 June 2006 on the classification of fauna into protected animals, harmful animals and game.

3.2.3 Policy implementation

The implementation of the policy requires basic structures as well as administrative procedures which have to be followed in the country in order for laws and other regulations related to the protection and sustainable use of natural resources to be properly applied.

The existence of legislative texts and procedures serves no purpose without the support of the tax system in funding the activities of various departments, especially to ensure the efficient application and control of the texts.

i. Structures

Madagascar has the basic structures required by CITES:

- A Management Authority represented by *Direction Générale de l'Environnement, des Eaux et Forêts* under the supervision of the Ministry of Environment, Water, Forests, and Tourism;
- Scientific Authorities represented by the Departments of Plant Biology and Ecology and the Department of Animal Biology of the Antananarivo University, for flora and fauna, respectively.

Pursuant to the recommendations of the action plan, internal structures have been set up:

- A permanent secretariat for each Scientific Authority, which ensures communication between the Scientific Authorities, the Management Authority, scientific committees, economic operators and national and international public and private institutions concerned;
- Scientific committees which provide support to the Scientific Authorities in issuing non-etrimental findings, such as setting quotas, providing information on species, etc.
- A CITES committee made up of financial and technical partners in charge of monitoring the implementation of CITES in Madagascar.

ii. Procedures

All the operations and procedures related to the export of species for scientific and/or commercial purposes have been summed up in the “Procedures manual for wildlife trade and research management”. This document was prepared as part of the implementation of the CITES action plan, under the guidance of DGEEF; all stakeholders, at least at the administrative level, have to have a copy of the manual.

An anti-corruption partnership agreement was signed by DGEEF with BIANCO (Independent anti-corruption office). It describes the procedure to be followed by both parties when carrying out joint controls and inspections. This is in line with the country’s efforts to ensure that its administration is transparent and characterized by good governance and a lack of corruption.

iii. Monitoring and control

For the purposes of control, the Management Authority collaborates with Customs officials by assigning representatives of forestry authorities to ports and airports, as well as with gendarmes and police officers at the local level.

Monitoring and control activities are carried out by Scientific Authorities and the Management Authority for visits to and inspection of breeding and storage centres. The information collected during a visit includes: standards for cages in which animals are kept, the existence of terms of reference for each trader, the site where animals and plants are collected, their exact number, the state of health of the animals, etc.

The responsibilities of the Management Authority are taken over at the regional level by the regional divisions and offices of environment, water and forests (DIREEF and CIREEF). The training conducted by CITES Committees (MA, SA, partner and donor NGOs) made it possible to transfer knowledge and conduct capacity-building activities for all stakeholders at the regional level (DIREEF and CIREEF officials, Customs officials, police officers, gendarmes, journalists...). To that end, workshops, in which representatives of the neighbouring regions also took part, were held in seven regions of the island.

iv. Financial resources

There is no specific budget line established by the State for the implementation of procedures and activities linked to Madagascar’s obligations under CITES, which fall within the remits of the species protection service. The Management Authority and Scientific Authorities have to request financial assistance from various partner organizations (international NGOs and bilateral donors) for the implementation of their programmes. There exists, however, a centralized fund, *Fond Forestier National* (FFN) to which forestry royalties are paid, but the Fund is not used for CITES activities in Madagascar. Obtaining funding for the activities described above remains difficult.

However, since the review of the legislation and the national policy between 2003 and 2007, the Scientific Authority and its committees were assigned an operational budget thanks to tax on wildlife export (2 % of FOB prices). This budget has enabled the Scientific Authority to undertake the tasks specified in national texts as well as those laid down in CITES texts.

Furthermore, in addition to technical support, DGEEF receives financial assistance from its donors such as CIMAD, WWF, WCS, DWCT, JARIALA (USAID)...for the projects under way and the reception of Malagasy representatives at meetings of CoP and the CITES committees.

The situation, however, is a very delicate one and could be disrupted if donors decide to stop providing assistance.

On the other hand, controlling wildlife products is only a tiny part of the responsibilities of police and Customs officials. They do not receive special funding for this type of activities but since these are state departments, they are financed from the overall state budget.

v. Sharing information

Madagascar has a website www.cites-magadascar.gov.mg which was created with the support of the French Cooperation Agency and IFAW. It is regularly updated to make available to the general public information concerning CITES and its application in Madagascar, the available data on species and exporters, as well as annual export quotas. The website contains a description of the action plan and the progress achieved for each activity.

The CITES committees meet regularly to exchange information on the progress achieved with regard to the action plan and the implementation of CITES in general. Each year, the Scientific Authority and environmental NGOs participate in a large meeting to share recent data in order to set annual quotas for the wild species listed in Appendix II.

The action plan provides for a meeting of the Management and Scientific Authorities with traders in order to exchange information and agree on mutual conduct. This meeting took place in 2006 and was deeply appreciated by traders.

The Management Authority and the Scientific Authority carry out annual visits to animal breeding and plant propagation centres in order to check the terms of reference of these centres.

Annual and biannual reports are sent to the CITES Secretariat in Geneva.

Madagascar regularly participates in meetings of the Plants and Animals Committees and of the Conference of the Parties in order, on one hand, to be able to follow changes in CITES and, on the other, to report on the progress achieved in implementing of the recommendations of the Convention.

Despite these various measures, however, communication remains a major problem, in particular at the national level. The adopted measures are not implemented in the same manner by the stakeholders because information about them is not disseminated efficiently. This is a constant hindrance to the system in general.

3.2.4 System weakness

The assessments, workshops and field trips have revealed several weaknesses within the system:

i. Structural weaknesses

Since the Malagasy political programmes in general depend a great deal on foreign assistance, CITES or wildlife trade, which is too sector-based, is not accorded sufficient attention. The Government provides only minimal support for the implementation of CITES. Forestry products other than wood are defined by law as “secondary products”. The absence of specific national strategies and policies on CITES, which emanate from the general State policy is noticeable. This applies to the conditions of the moratorium which have not been sufficiently studied.

As far as traders are concerned, the list (Appendix II) of species which can be exported is very limited despite the fact that Madagascar has a great specific diversity of species. In comparison to deforestation (slash-and-burn cultivation) and bush fires, trade does not constitute a threat to biodiversity and different ecosystems; yet, a very small quota is imposed. Thus, in the absence of a list or system of fixed prices established by traders themselves, some traders tend to give too much value (high price) to their product; others sell their quota to other traders.

In the absence of measures to disseminate information about and promote various sectors, the general public and decentralized territorial communities accord little attention to trade, whereas villages and grassroots communities manage Protected Areas. This is the case of the Ibity massif (Vakinankaratra region) which is one of the collection sites; the people do not know enough about wildlife trade and their relevant rights. As a result, they are powerless when confronted with the permits granted by the Management Authority and the Scientific Authority, or the hunters and collectors who act in bad faith, in most cases claiming to be scientists.

The major problem at the structural level, however, is the constant changes of ministers, leaders and technical staff (division heads, service heads, etc.). As a result, the following issues were repeatedly raised during the two workshops on this review:

- Communication and coordination of the efforts of departments and stakeholders are at risk;
- Agents who were trained in CITES are being replaced;
- Procedures keep changing.

ii. Procedural weaknesses

Procedural problems result from:

- The late distribution of the official newspaper: this applies to the two national gendarmerie companies visited in the Antsinanana and Alaotra Mangoro regions where legislative environmental and forestry texts are not always available at the right time;
- Frequent changes in the said procedure which lead to confusion among traders (for example, the location of tax collection offices), prompting corruption and illegal export;
- The failure to fully integrate the decentralized services of the Ministry of Environment, Water, Forests, and Tourism (DREEFT and its branches): this applies to the collection and hunting permits granted by the Scientific Authority and the Management Authority, which are not being transmitted to the DREEFT concerned in order for a duplicated copy to be made to ensure control and monitoring;
- The failure to integrate the decentralized territorial communities through a local or regional system of receipts and refunds for the exploitation of resources;

In the absence of a broad wildlife trade policy, problems which arise with regard to marketed species are dealt with on a case by case basis (the case of *Prunus africana* and tortoises). As a result, it is always as a matter of urgency, when the species are in danger, that an appropriate strict regulation is issued. Thus, there are so many texts on trade in wild species (CITES and non-CITES) that they can easily lead to confusion. This concerns the classification of the Malagasy flora on the basis of the national conservation status; trade in samples of species: *in vitro* propagation of Malagasy seeds abroad; and enforcement of sanctions (COAP, CITES, etc.) Regulations are sometimes adopted without a prior assessment of their potential economic, social or environment impacts.

iii. Weaknesses related to monitoring and control

Control and monitoring officials are hindered by a lack of equipment. The numerous examples reported and encountered included: the national gendarmerie of the Antsinanana region did not have the equipment (motorboat, etc.) required to control trade in high seas in species from the Masoala National Park, and ports and airports servicing long haul flights were not equipped with a biological scanner.

The small number of control and monitoring officials should also be mentioned. In the Vakinankaratra region, for example, five (05) forestry stations (CANFORET) monitor seven (07) districts although CANFORET is represented by only one official.

At the national gendarmerie and Customs, in view of the current national (drug trafficking, crime, etc.) and international (terrorism) contexts, wildlife trade has been relegated to the background. In addition, there is a noticeable lack of communication among different control departments and the Management or Scientific Authority concerning the identification of species of fauna and flora and the imposition of quotas.

Moreover, the fact that certain sites with a huge biodiversity, such as the Ibity massive (Vakinankaratra region), have no administrator results in the proliferation of illegal collection activities as well as unregistered sales.

iv. Weaknesses related to financial resources:

The financial impediment affects both the Scientific Authority and the Management Authority. This is a source and type of dependence which destabilizes and weakens the trade system; namely, that the functioning of the Scientific Authority (permanent secretariats for flora and fauna) are financed by traders; there is a lack of financial support for research (population assessment, studies into the biology of species for ranching purposes, etc.) into marketed and marketable species; there is no specific budget line for the implementation of CITES, which falls within the remits of the DGEEF species management department.

3.3 Identifying impacts

The implementation of the policy has had both positive and negative environmental, economic and social impacts.

3.3.1 Environmental impacts

Most measures adopted during the implementation of the wildlife trade policy sought to correct the errors reported during the implementation of the overall state policy. These are targeted measures

that do not apply to all Malagasy species of fauna and flora. These measures can be internal or external. They include: the prohibition to hunt lemurs, the signing and implementation of CITES in Madagascar, the payment of royalties on the export of wild species, the moratorium on the export of wild species in the mid-nineties, the inclusion of chameleons and green lizards of Madagascar in CITES Appendix II, the inclusion in Appendix II of the crocodiles of Madagascar and of some African countries, the inclusion in Appendix I of Malagasy tortoises, the 2002 moratorium prompted by the country's political context, the inclusion in Appendix II of *Uroplatus*, *Mantella* spp. and other Malagasy species, and the elaboration of an action plan for the implementation of CITES in Madagascar.

A measure can have a positive, negative or no impact. Not all measures have a positive impact on biodiversity because, while being good for one or two species, they can be detrimental to others. For example, the inclusion in Appendix II of chameleons and green lizards prompted great interest in the exploitation of other species, such as *Uroplatus*, and other species of amphibians. In addition, the ban on the exploitation of Golden *Mantella* has boosted the exports of other *Mantella* species. Some measures are reported to have a negative effect on the targeted species; this is the case, for example, with the Malagasy radiated tortoises which are currently traded and collected illegally on a large scale.

• Impact on the wild population:

Owing to their biological state and habitat, some of the species on the market have to be regularly monitored (the case of *Mantella crocea*), while others require periodic exploitation to ensure better regeneration (genus *Aponogeton*).

The case of *Mantella crocea*: the population declined significantly in its natural habitat (IUCN endangered status). The species is currently in danger of losing its habitat but is also threatened by collections carried out by hunters. Although it appeared for sale on the international market only towards 1998, the data gathered by WCMC estimate the number of individuals exported between 1998 and 2005 at over 9,400. Clearly, the collection of the species in the wild, in combination with the degradation of its habitat and the natural restrictions on its distribution can pose a threat to this species.

A moratorium is a radical initiative to prevent over-exploitation of a resource and is considered a positive initiative for the wild populations.

Example: The export of some species, including *Mantella crocea* and chameleons was particularly lucrative for the Malagasy traders towards 1990 and the moratorium during this period was sufficient to restore the population in the wild.

• Impact on illegal trade

Some species are illegally traded in large numbers despite the measures adopted for their protection. The case of *Astrochelys radiata* can be taken as an example to illustrate the existing inconsistency between its inclusion in CITES Appendix I and the actual state of its exploitation in the wild. There is currently an increase in the rate of illegal exploitation of this species.

9 May 1999: 206 tortoises and 31 snakes were confiscated by Customs officials at the Roissy airport on a flight from Antananarivo; 200 other tortoises were intercepted on the same day at the Orly airport;

2002: Over a thousand radiated tortoises were discovered on a fishing boat returning to La Réunion;

October 2003: Two foreign nationals were arrested for possession of 197 radiated tortoises which were going to be sent to La Réunion;

December 2003: A shipment of 70 radiated tortoises heading for Toliara was confiscated in Ambalavao;

January 2004: 19 snakes and 74 tortoises which were being transported by a Czech, were discovered in Prague;

November 2004: More than two (02) tons of smoked turtle meat, 50 kg of smoked turtle liver and 214 radiated tortoises were confiscated;

February 2005: Three (03) Malagasy military officers undergoing training in La Réunion on board of a Transall plane which belonged to the French army were arrested on the Roland-Garros airbase with 180 small tortoises, as well as vanilla, precious stones, and 6,000 sachets of benzhexol.

April 2005: Five (05) poachers were arrested by the national gendarmerie in Itampolo with 125 radiated tortoises;

September 2006: A Malagasy national was arrested by Customs officials at the Bangkok International Airport in Thailand for possession of fifteen (15) radiated tortoises;

July 2007: Two Spanish nationals were arrested at the International Airport of Ivato for possession of 46 tortoises which were hidden in their luggage.

In reality, many more offences have been committed, but these examples show that in most cases the procedure is limited to the confiscation of goods. The sentences and fines imposed in the few cases which have been investigated have not had a deterrent effect. Even the sanctions provided for under Law 2005-018 of 17 October 2005 on international trade in species of wild fauna and flora have not been enforced since its promulgation. Sanctions were enforced for the first time in the case of the Spanish nationals. They were sentenced to five years in prison, without parole and to a fine of more than 50 million ariary for a Customs violation, plus 50 million ariary in damages. Procedural errors are always used to justify the failure to apply the procedure.

In some other cases, the status of species under CITES corresponds to the state of export in these species; this applies to lemurs which have been listed in Appendix I since the ratification of the Convention.

• **Impact on the conservation of species**

The CITES action plan and the activities carried out by collectors help to reinforce the bases of scientific knowledge of biological resources (phytogeography, studies into certain species, etc.)

The measure adopted with regard to lemurs is an example which can illustrate the efficiency of certain measures in protecting certain species. This initiative was taken in the sixties in order to prohibit all exploitation of this species. At present, they are among the best preserved species in Madagascar. Measures have also been taken to prohibit the exploitation of species in Protected Areas as well as to carry out environmental impact assessments; these measures are vital to the protection of species in their habitat. Although these are not political measures on wildlife trade, they help to promote conservation initiatives.

• **Impacts on species management**

In the past, the wider wildlife trade policy did not include any management measures (management structure, database, quota...) (the case of crocodiles in 1994 when they were included in Appendix II and subjected to a quota was a measure imposed by CITES). The major initiative with regard to species management came after the 2002 moratorium, with the implementation of the action plan. A special management measure aimed at protecting fauna species from trade activities is now in place. All species (especially vertebrates) have been classified on the basis of their national conservation status. The removal from the wild of species sold on the international market is now subject to an annual quota which is based on their conservation status.

A similar measure is being developed with regard to flora.

A database on the export of species was established in 2003. This is another initiative linked to the implementation of the action plan.

3.3.2 Socio-economic impacts

• **Impact on the structure of supply and demand**

Quotas and the inclusion of certain species in CITES Appendices resulted in a reduction, even limitation of the range of products offered on the international market: smaller supply leads to higher demand, which encourages illegal trade and an outflow of or reduction in state revenues.

• **Impact on the competitiveness of traders**

The proper and continuous implementation of CITES is hampered by frequent changes in political leadership. This has an adverse effect because there is tough competition at the international level. At present, with the late issue of quotas, trade is deteriorating. Consumers are turning to other countries and traders struggle to sell their products; some traders, on the contrary, reported that they were forced to reject buyers because quotas were not large enough ...The demand drops owing to a decrease in the number of consumers.

For their part, collectors turn to other activities in search of a satisfactory income. From the economic point of view, trade will satisfy traders and collectors less and less as long as administrative problems remain unresolved.

Malagasy traders have become less competitive and their prices are falling.

Wildlife trade is a real network which involves several stakeholders and forms a more or less complex system. A failure at any level can undermine the whole system.

• **Distribution of profits within the chain of trade**

Although prices on the international market are falling and trade is becoming difficult, both exporters and collectors seem to profit from wildlife trade. While everyone can profit from it, the profits are unequally distributed, which poses a problem. Wildlife trade is much more profitable for private traders. This can be seen from systematic increases in their investments in other activities. On the other hand, collectors working for these traders receive only minimal profits.

Of course, traders have numerous expenses (storage infrastructure, JIRAMA* water and electricity bills, advertisement, marketing abroad in order to find buyers for the product, shipment fees, bush

'middlemen' fees, administration fees, taxes, etc.) but there is a significant difference between export prices and the prices paid to collectors.

It should be pointed out that a minority group, namely the exporters, get the largest share. The immediate result of this unequal distribution of profits is that collection constitutes only an additional activity for collectors and does not contribute in a significant way to the improvement of their social welfare. The majority of these stakeholders live in rural areas where, unlike in the urban areas, a traditional society with its archaic social structures (a very pejorative term) still prevails.

Before starting to review the policy and its impacts, it is appropriate to have a close look at an economic assessment of several sectors (flora and fauna) which supply international trade.

TRADE IN *PACHYPODIUM*

Objective

This review is carried out in order to analyze the distribution of profits within the *Pachypodium* trade chain on the local, national and international markets. It should identify the products and export flows for which both management and control measures should be introduced to help ensure the sustainable utilization of these resources. The strengths and weaknesses of each activity in this sector should be highlighted.

Description of the *Pachypodium* export sector

1) Production

a) Production place

In Madagascar, species belonging to the *Pachypodium* genus are scattered over the whole island with the exception of the eastern part, where the bioclimate is moist and very moist (Cornet, 1974), moist evergreen forest ecofloristic zones (Faramalala, 1988).

The morphology of species of this genus allows them to adapt to dry regions. They can also be cultivated outside their natural habitats, provided certain conditions are met (soil characteristics, exposure to light, water availability). Compared to other species, *Pachypodium* plants are usually easy to cultivate *ex situ*. Traders who propagate them are mostly concentrated in Antananarivo and the techniques they use differ: some use the semi-direct propagation method, others propagate from cuttings.

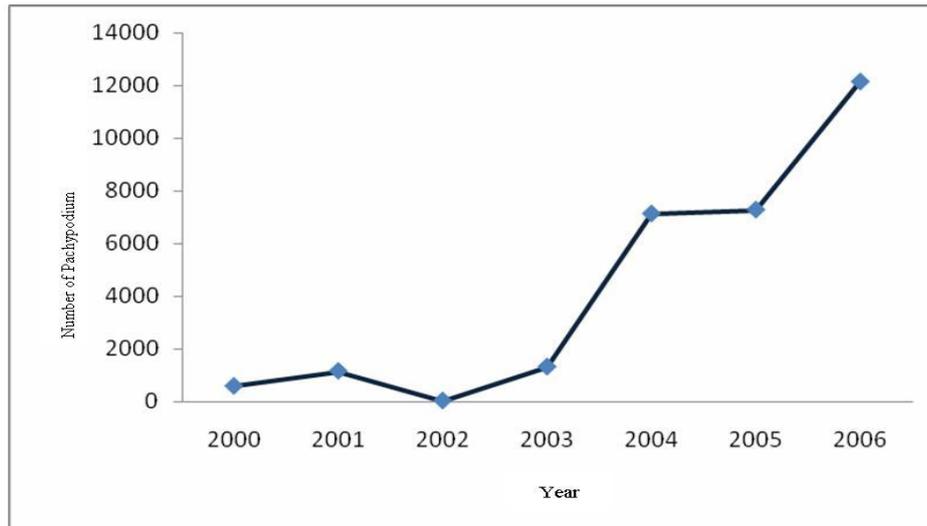
a) Seed germination

The germination capacity of seeds diminishes with the length of their storage. After two or three months of storage, unused seeds have to be replaced. This means that new seeds have to be collected if the stock is depleted.

b) Annual export

Since 2003, the sale of *Pachypodium* increased continuously. They are among the most popular decorative plants on the international market. The number of plants exported in 2006 was well above 12,000 (figure 5).

Figure 5: Number of *Pachypodium* exported every year



Source : CITES permanent secretariat Flora Madagascar

2) Production cycle

From top down, starting with production, transformation, marketing and consumption, six cycles enabling *Pachypodium* to be put on the market can be identified; these cycles differ by the steps taken by sellers (figure 6).

The first cycle is the shortest and cheapest because the products are purchased directly from collectors. On the other hand, the fourth cycle is the longest, with four main stakeholders (collectors-transporters, sellers in Anosy, exporters and a seller on the international market) coming into play before the products reach consumers.

At present, most exporters no longer collect plants in the wild because they already have parent plants from which they collect seeds. Thus, there are fewer stakeholders when exporters propagate *ex situ*.

3) Price trends

The price of products varies depending on the size of the plant; mentioned bellow are the average values obtained on the basis of enquiries, information and research on the Internet. The calculations were based in particular on medium-size plants (maximum diameter = 10cm)

According to the information obtained, there is a large difference between local and international prices depending on the intermediate steps taken by each trader. Moreover, exporters have very different prices, which can be due to the destination of the plant: directly to consumers or to retailers (Table 6).

In addition, it should be pointed out that national sellers (the case of flower merchants in Anosy) mostly sell *Pachypodium densiflorum* and *P. brevicaulis*. They rarely sell other species, which can be due to the accessibility of the collection site and the fees related to the transportation of products.

Diagram 2 : *Pachypodium* production cycle

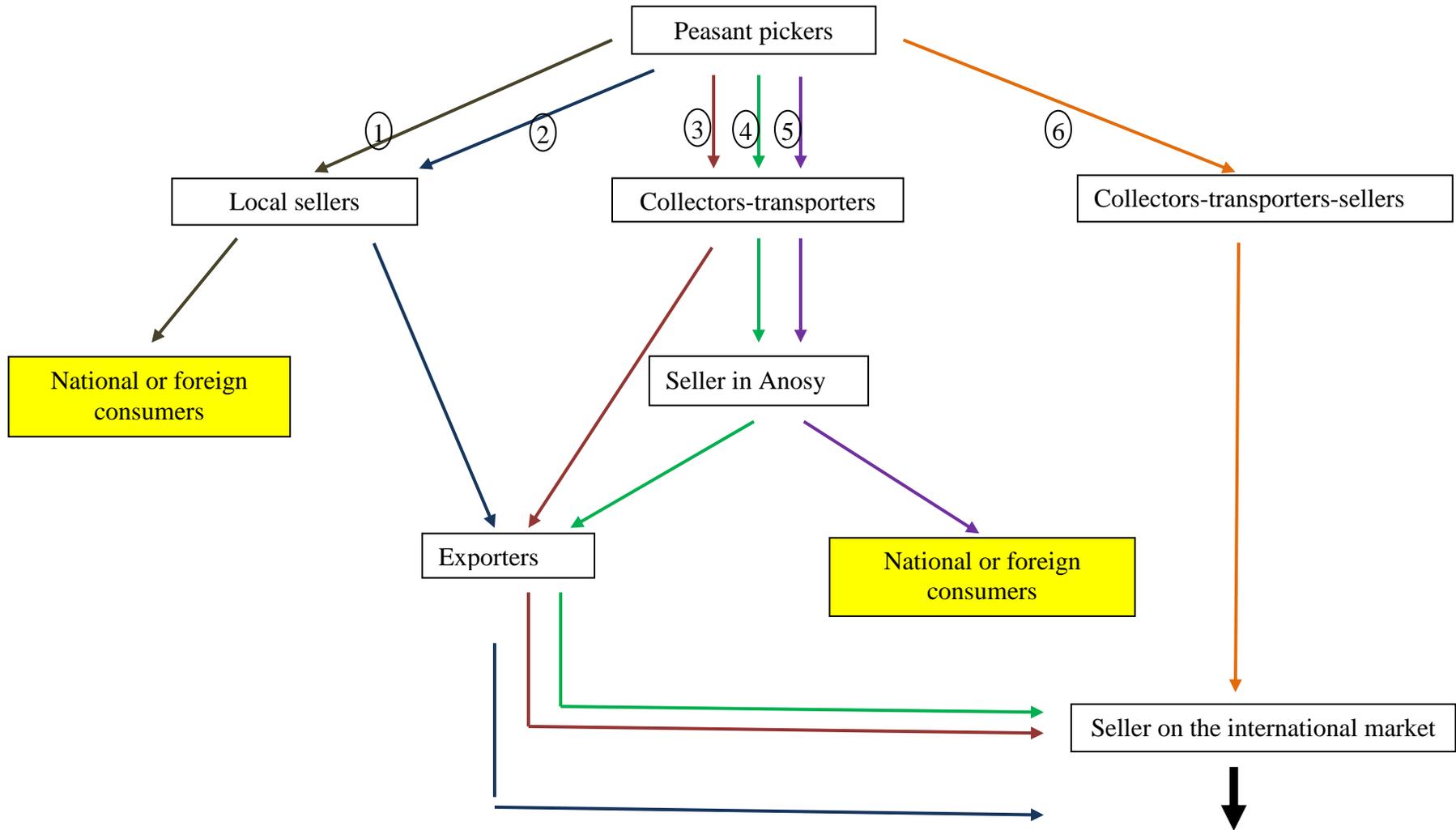


Table 6: Price of *Pachypodium* products

| Species | Local collectors | Local sellers | National sellers | Exporters (in ar./ plant) | International market (in ar./ plant) | | |
|-----------------------|--|--|--|---------------------------|--------------------------------------|-------|--------|
| <i>P. bicolor</i> | 5,000 ar. - 10,000 ar. (per basket) | 100 ar. - 3,000 ar. (per plant) | 600 ar. - 5,000 ar. (per plant) | 1,700 | 46,000 | | |
| <i>P. brevicaulis</i> | | | | 5,100 | 34,500 | | |
| <i>P. brevicalyx</i> | | | | 6,000 | 40,250 | | |
| <i>P. cactipes</i> | | | | 5,100 | 28,750 | | |
| <i>P. densiflorum</i> | | | | 7,000 | 36,000 | | |
| <i>P. eburneum</i> | | | | 5,100 | 46,000 | | |
| <i>P. geayi</i> | | | | - | - | 6,800 | 34,500 |
| <i>P. gracilius</i> | | | | 2,550 | 16,100 | | |
| <i>P. horombense</i> | | | | 5,100 | 12,650 | | |
| <i>P. inopinatum</i> | | | | 5,100 | 69,000 | | |
| <i>P. lamerei</i> | | | | | 28,750 | | |
| <i>P. makayense</i> | | | | 2,550 | | | |
| <i>P. menabe</i> | | | | 1,700 | | | |
| <i>P. rosulatum</i> | | | | 8,500 | 78,200 | | |
| <i>P. softense</i> | | | | 4,600 | 53,820 | | |

Exchange rate used: USD 1 = MGA 1,700; EUR 1 = MGA 2,300

4) Price breakdown

For further information, this section gives the cost of intermediate activities. A lot of care is required in order to keep alive, cultivate *ex-situ* and ship abroad *Pachypodium*. Moreover, these are costs which determine the price of each product.

a) Average cost of activities

- Community royalties:

When plants are collected in the wild, MGA 1,000 to MGA 2,000 should be paid in royalties to the community per basket.

- Transportation:

This is one of the most vital aspects because the cost of this activity varies a lot depending on the location of the site where the species is collected.

- Average cost of propagation

This cost varies depending on the method used by the exporters. Two types of *ex-situ* propagation are used in most cases:

= Semi-direct propagation by seeds collected from parent plants.

This is the most reliable technique, but it requires a lot of time and care because during the first year of the plant's life, the plant must be kept at a temperature of about 20 to 25° C in a greenhouse in order to stimulate its development. At this stage the plantlet is still vulnerable and there is a high mortality rate.

Despite all the time and care required in the first year, however, this method is easy to follow. The major expense involved is the price of the workforce.

= Propagation by cuttings of the aerial part of parent plants:

Propagation from cuttings is a simpler technique. It requires the injection of a root-promoting hormone in order to speed up growth of the cuttings. In addition to the cost of the workforce, the price of the hormone should also be taken into account; it reaches around US\$ 3 to 5 (5,100-8,500 ar.) per packet containing 20 sachets. Each sachet is sufficient for over 50 cuttings.

- Planting in pots

After seeds germinate and young plants are obtained (diameter over 1.5 cm), plants are replanted in individual pots. Sand and gravel are used for each pot to ensure that the conditions in which they grow are not too moist; the substrate should be aired and should not retain water. The costs of the pot and ingredients for the substrate add up to around MGA 1,000 but this cost is not required for every propagation because the pot and its contents can be reused.

- Cleaning and packaging

This is the most important part, which demands a lot of attention; a lot of water, time and space is required to clean the plant. Before being packaged, plants intended for export are dried outdoors, in the shade. Exporters use newspapers and carton to package the plants. The total cost comes up to about MGA 2,000 for each plant.

b) Determining export prices

In addition to the various activities mentioned above, exporters also have to pay for the shipment and a royalty of 4 % of the value of the exported products to the FFN (FOB price). On average, the margin taken by traders varies between 30 and 50 % or even more, so they get more than half the cost of the transaction.

Table 7: Average price of each activity for 100 plants (x Ar.1000)

| Activities | Export | |
|---------------------------------|--------------------|--------------------|
| | Propagated species | % |
| FOB price or average sale price | 700 | 100 |
| Transaction margin | 267 - 367 | 38.2 – 52,4 |
| Gross market cost | 433 | 61.8 |
| Royalty (4% - 6%) | 28 | 4 |
| Gross market margin | 405 | 57.8 |
| Cleaning and packaging | 200 | |
| Planting in pots | 100 (optional) | |
| Propagation | 45 | |
| Collection and transportation | 60 | |

FOB : Free On Board , Gross market cost = the total cost of activities

$$\boxed{\text{Transaction margin} = \text{FOB Price} - \text{Gross market cost}}$$

These costs do not include shipment to the airport; shipment fees can be paid directly by the importing clients.

To sum up, the price charged by local collectors for *Pachypodium* is MGA 200; its export price can exceed EUR 20 (around MGA 80,000). The difference in price between exporters remains a problem for the standardization of national revenue; for this reason, we propose standard export prices depending on the size and the country of destination of the plants. There is a significant difference between the price charged by local collectors and that charged by exporters.

TRADE IN PRUNUS AFRICANA

Objectives

The aim of this document is to examine the price chain of *Prunus africana* on the local, national and international markets.

1) Properties of *Prunus africana*

Used to treat prostate diseases, the bark of *Prunus africana* is used as a component of some medicines, such as Tadenan and Prostatonin to fight the «old man's disease». It is exploited by pharmaceutical laboratories and is considered one of the most promising medicinal plants on the

market (owing to its significant presence on the international market as well as the existence of a local transformation company).

In traditional medicine, the *Prunus* bark is also used against fever and malaria.

2) Description of the *Prunus africana* export sector

a) Production place

This plant grows in Madagascar, Kenya, Cameroon and Congo, and Madagascar is the second largest exporter after Cameroon.

In Madagascar, *Prunus africana* grows in the Sofia region: Marotolana, Ambatoriha, Antsahonjo and Bealanana. This species is exploited in its natural habitat; an average of 75 kg of bark is the product which can be extracted from one tree (Cunningham *et al.* 1997).

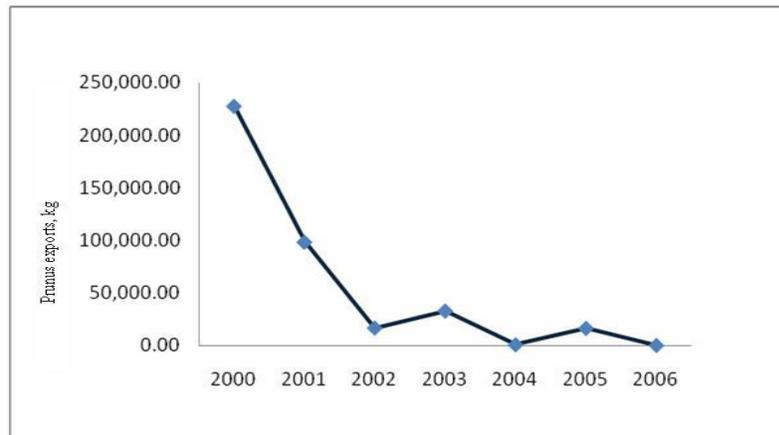
A tree of the natural moist montane forests, this species has a slow rate of growth. The part utilized is its bark, but care must be taken not to touch parent cells of the cambium as this can kill the plant.

It can be propagated *ex situ* (semi-direct method or from cuttings), but it grows very slowly. Thus, years are needed for the tree to become ready for utilization.

b) Annual export

The exploitation of *Prunus* in Madagascar commenced at the beginning of the 1970s and since then the quantity of usable rough bark increased continuously. Between 1972 et 1981, 1.3 million kilograms of soft extract were exported. In 1985, exploitation activities came to a halt and then recommenced in 1988 with a high rate of exploitation of between 300 and 600 tons of rough bark (Schippmann, 1991). In 1990 it becomes the most exported species. Between 1995 and 1998, 14 tons of soft extract were exported (an equivalent of 2.82 millions kilograms of dry bark). Overall, around 2.45 million kilograms of soft extract were exported in 1995, more than 2.78 millions kilograms in 1996 and 3.091 million kg in 1997 (Schippmann, 1997). From the year 2000 (Figure 7), *Direction générale des eaux et forêts* stopped granting exploitation permits and the rate of exploitation fell (CITES, 2006).

Figure 6: Annual export of *Prunus africana*



c) Production cycle

The presence of a transformation company for raw products simplifies the *Prunus africana* production cycle because each stage must respect the following standards:

- Company suppliers must have a collection permit which authorizes them to exploit the area where the targeted species is present.
- Once a permit has been obtained, suppliers hire collectors who will collect and dry the tree bark;
- The product will be transported by an entirely different stakeholder who will set the price depending on the accessibility of the collection site.
- Suppliers deliver dry bark directly to the transformation company,
- The company transforms the raw product into a semi-finished product and exports it to France, Switzerland or Italy where pharmaceutical laboratories transform it into a finished product, such as medicine and liquid extracts.

In addition to production, the Bionex company (formerly INDENA) also imports raw material from other above-mentioned countries. This import constitutes the second cycle which generates on average of more than 100 kilograms of soft extract per year.

d) Price trends

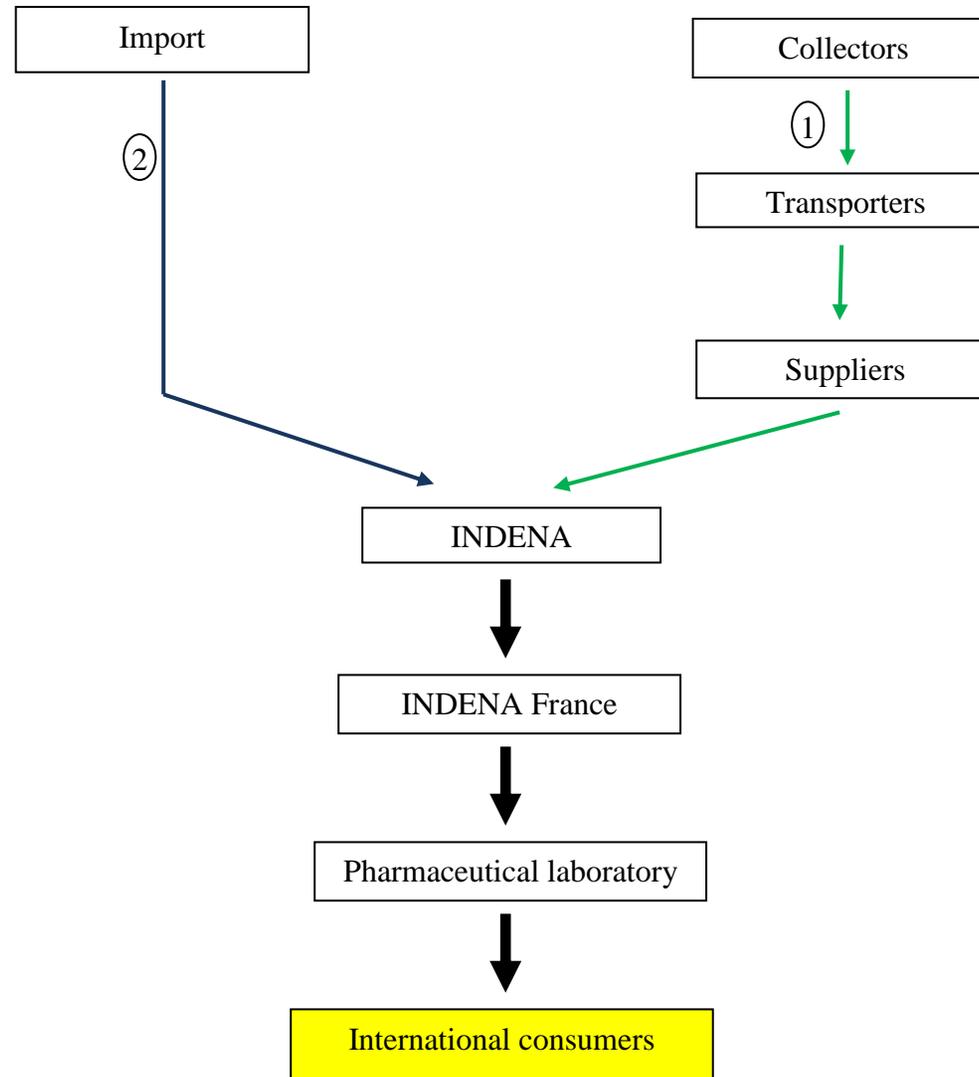
The cash flow in the *Prunus africana* sector does not change; on average the transformation company receives raw materials at around MGA 2,600-3,500 per kilogram of dry bark (tables 8 and 9). And even the royalties which have to be paid to the community and to the DGEEF are set at MGA 40-80.

The stakeholders of this sector earn a minimum of MGA 2,000,000 for a collection of 100,000 kilograms which is the average quantity obtained with each collection permit.

Table 8: Average cost of each activity for 100, 000 kg of raw material (in ariary)

| Activities | Unit cost (per kilo) | Gross market margin for 100,000 kg of product |
|---------------------------|----------------------|---|
| Royalties for collection | 80 | 8,000,000 |
| Suppliers | 2,600-3,500 | 47,000,000 |
| Transporters | 2,500 | Depends on the accessibility of the collection site |
| Royalty for the community | 40 | 4,000,000 |
| Collectors | 2,300-2,400 | Depends on the cost of materials used |

Diagram 3: *Prunus africana* production cycle



At BIONEX (formerly INDENA), the rough bark undergoes industrial transformation which results in a soft extract considered as a semi-finished product. The transformation has an output of 0.4-0.5 %, except for the Malagasy species, for which it can reach 0.7 %.

The gross margin listed below does not yet include fabrication costs.

Table 9: Gross margin on the export of 700 kg of soft extract

| Activities | Unit price (per kilo) | Average sale price for 700 kg of soft extract | Gross margin |
|-----------------------|-----------------------|---|--------------|
| Royalty for FFN | 41,400 | 28 ,980, 000 | |
| Export (soft extract) | 1,035,000 | 724,500,000 | 648,520,000 |

Gross margin = Average sale cost – (FFN royalty + price of raw material)

The « Koto fy » retailers are well known by exploiters but not by research scientists. The information which the latter have comes from exploitation data. Therefore, it is advisable to review the current state of stocks of *Prunus africana* because exploiters claim that there is still a large quantity of usable *Prunus* in the natural habitat.



TRADE IN AMPHIBIANS³⁹

The export of amphibians, which started before 1990, is an activity which continues to this day. The most exported genera are *Mantella*, *Scaphiophryne*, *Boophis*, *Mantidactylus*, *Heterixalus*. All *Mantella* species and one *Scaphiophryne* species are listed in CITES Appendix II.

1) Exploitation, collection and storage methods

The exploitation process can be divided into five processes which differ by the number of collectors between *hunters* and exporters:

- Exporters are supplied directly by hunters: this is less attractive for exporters because it involves a lot of travel and more time is needed to place orders. Orders for specific volumes are placed during different periods of the year.
- Collectors supply exporters: this is currently the most popular method. These collectors act as intermediaries for orders between exporters and hunters. Exporters can spend much more time looking for clients. On the other hand, collectors have more time to fulfil orders as long as they are familiar with the site where the animals are collected. As far as hunters are concerned, since orders are not very specific, they can collect the

³⁹ Roland; RHE.1999. The live batrachian sector of Madagascar. End of study thesis. ESSA. University of Antananarivo; Edouard, R.A. 2007 Conservation and development of biological resources: the case of *Mantella* sector in Fierenana. Thesis for the University Diploma in Environmental Studies, University of Antananarivo

specimens they encounter in the forest and deliver them directly to collectors. The rate of exploitation varies depending on the needs of exporters because hunters and collectors neither store nor breed the caught animals.

- Exporters are supplied by different collectors: there are two intermediaries between exporters and hunters. This system is usually used for large or urgent orders, or if the species ordered can only be found on remote collection sites.

- Direct sale to exporters without receiving an order: This process has a significant impact on the price of the products. Collectors must sell the products cheaply because for the time being exporters do not have an urgent need for the animals collected.

- Exporters supply each other: owing to competition, this method is rarely used.

In general, hunting is carried out by local peasants and other villagers living in the vicinity of collection sites. These sites are located in natural forests, around lakes and marshes all over the island.

Amphibians are mainly collected between November and April. During these two months they seem to be more active and therefore easier to find; yet, hunting and collection are authorized only in the period between February and April. Adult specimens are the ones collected the most. When they decide to collect, however, hunters, collectors and even exporters do not worry about biological factors which have a direct impact on the development of the animals.

During hunting expeditions collection sites are often searched for several days. Animals are hunted by hand and transported in tissue bags or woven baskets.

In the past, all encountered animals were collected, but at present, owing to competition, exporters and collectors are becoming very demanding with regard to the condition and size of the animals; specimens are carefully selected before delivery.

While orders are being accumulated, collectors keep animals in baskets or boxes in which they are transported and do not feed them unless the waiting time is at least one week. There is a high mortality rate before shipment and dead animals are not counted; for this reason exporters try to place their order directly in the field in order to avoid lengthy storage of animals.

The rate of exploitation depends on the orders received from clients. It drops by half during the rainy season because frogs are no longer active and become difficult to find.

2) Price comparison

Frogs are usually caught by villagers during the reproduction season. They are sold to intermediaries who supply them to exporters.

The prices paid to hunters range from MGA 60 to MGA 400, or USD 0.04 to USD 0.35, depending on the species, whereas collectors receive MGA 150 to MGA 1,200, or USD 0.13 to USD 1. The FOB prices declared by exporters range from USD 3 to USD 15, or MGA 6,600 to MGA 33,000. for batrachian animals, whereas the international prices found on the Internet range from EUR 30 to EUR 60, or MGA 69,000 to MGA 158, 000.

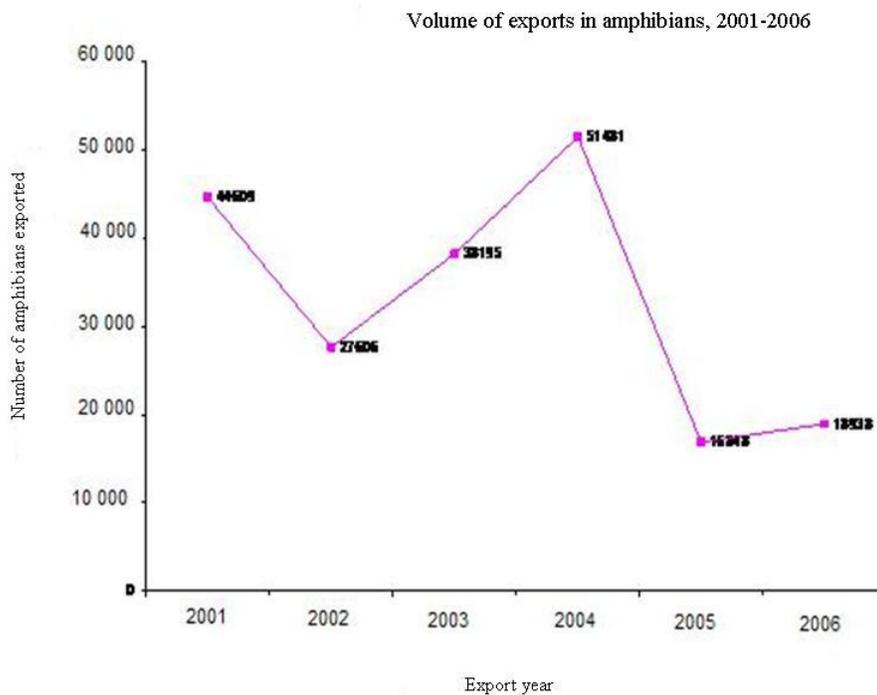
Table 10: Average prices of amphibians from the collection site through to the international market

| Exported animals | hunters | collectors | exporters | On the international market |
|-------------------------|--------------------------|-----------------------------|--------------------------------|------------------------------------|
| Amphibians | MGA 60-400 per animal | MGA 150-1,200 per animal | MGA 6,600-33,000 per animal | MGA 69,000-158,700 per animal |

3) **Development of and trends in the sector**

The improved exploitation of this sector results in a demand for higher quality. Trends in this sector, however, will always depend on the rate of depletion of the resource as long as profit distribution systems have not been improved and research into *ex situ* conservation has not been expanded.

Figure 7: Volume of exports in amphibians



4) Economic assessment of the sector

There are three types of activities in this sector: hunting, the transport of the products of hunting, and marketing.

a) Stakeholders

There are two types of stakeholders in the batrachian sector: merchants and transporters.

Merchants include hunters, collectors and exporters. Some exporters have an advantage because they already have a wide circle of clients abroad and are well informed about market trends in the given countries, whereas others can only deal with one or several buyers.

For collectors who act as intermediaries between exporters and hunters this work is one of their main economic activities. They receive twice or three times more money than hunters.

Hunters, most of whom are local peasants or people living nearby, try to sell their products to collectors or traders at prices which they consider more profitable for them.

Collecting animals is not their main economic activity but this activity can help them meet their daily needs as it generates a more or less regular income.

As far as transporters are concerned, there is no specialized transport in this sector. Most hunters transport their live products by foot; in the case of collectors, bush taxis (public transport) are involved in transporting products. Therefore, transporters ensure the transport of products from the collection site to the places where exporters live. Collectors pay for the transport.

b) Price formation

The price formation differs greatly depending on the sector. The common aspect is that every stakeholder hopes to make higher profits than in the previous year. Moreover, the price of exported animals is determined by the law of competition on the international market. This export price plays an important role in forming the price because only exporters know this market trend. In general, traders determine the price paid for animals to hunters and collectors and the export price.

The costs of the three main activities in the sector differ depending on the stakeholders.

- As far as the cost of marketing is concerned, it is minimal for hunters because, apart from the price of the wild animal, only the cost of the basket in which animals are transported is counted.

- On the other hand, collectors pay the purchasing price of the animals and for the basket or box in which animals are transported. Some traders, however, require adequate packaging for export in order to keep the animals in perfect health and to prevent mortality during the trip.

- For exporters, the price is higher because they have to pay for the workforce, maintain storage equipment, feed the animals, package the products for transport, communicate with importers and pay fixed and variable taxes to the forestry administration. For this reason, the costs incurred by traders differ depending on the scope of their activity.

- The cost of transport is minimal since hunters travel on foot to the places indicated by collectors.

- Collectors pay for their travel and animal expenses which vary depending on the place to which the animals are delivered. At the international level, the transport of animals by cargo is paid for by the clients. Transport cost varies depending on the destination of the animals.

In general, trade in Malagasy fauna generates very limited profits at the local level. Local residents are compensated for the value of time invested in hunting and collection. Almost all the income that could be generated by the export of wild fauna goes to exporters.

🌿 TRADE IN LAND TORTOISES

(Extract from the report « National CITES policy review in Madagascar. Social dynamics of trade in fauna and flora » written by Cécile Bidaud (IHEID-GREG) and Solofo Mika Randria (University of Antananarivo), Geneva 2007.

This sector of trade is peculiar because it is currently illegal. It is of interest because a lot has been said about it in newspapers and during the consultations held in Antananarivo. It seems, therefore, to be important for these people. Called “a leading species” of the Malagasy south by conservation NGOs, and constituting an important source of income for re-sellers, tortoises raise a combination of environmental, economic and social issues.

Two species of land tortoises are found in southern Madagascar:

Astrochelys radiata (Shaw, 1802), sokake, tsakafo, « sokatra » in Malagasy, radiated tortoise in French and *Pyxis arachnoides* (Bell, 1827) or sokapila in Malagasy, “tortue araignée” (spider tortoise) in French, which has three sub-species (*Pyxis arachnoides arachnoides*; *Pyxis arachnoides brigoii*; *Pyxis arachnoides oblonga*).

The distribution areas of these tortoises intersect on Madagascar’s south-eastern coast. Radiated tortoises weighing 18 kilograms can reach 45 centimetres, whereas spider tortoises are a lot smaller (10 centimetres). Peasants often confuse spider tortoises with young radiated tortoises (Leuritz, 2005; confirmed in various consultations). This is reportedly one of the reasons why *Pyxis arachnoides* was moved to Appendix I in 2005 in order to prevent trade from threatening the survival of the species as a result of identification errors. Despite milder conservation measures for this species, *Pyxis arachnoides* seems to exist in few numbers and be less studied than *Astrochelys radiata*. Malzy (1964, p.441) writes “According to the calculations carried out, over the same period of time and on the same route, we saw 195 *Testudo radiata*⁴⁰ and only 16 *Pyxis arachnoides*”.

Table 11: Background information on the status of the two land tortoises of southern Madagascar⁴¹

| | <i>Astrochelys radiata</i> | <i>Pyxis arachnoides</i> |
|--------------------|----------------------------|--------------------------|
| CITES Appendix I | 01/07/75 | 12/01/05 |
| CITES Appendix II | | 01/07/75 |
| IUCN 2000 Red list | Vulnerable | Vulnerable |
| | | |

⁴⁰ Radiated tortoises seem to have caused numerous debates on taxonomy. They are found under different genera names: *Astrochelys*, *Geochelone* or *Testudo*

⁴¹ Source: <http://www.cites.org/fra/resources/species.html>

| | | |
|--------------------|------------|---------------|
| IUCN 1996 Red list | Vulnerable | Vulnerable |
| IUCN 1994 Red list | Vulnerable | Least concern |
| IUCN 1990 Red list | Vulnerable | Not evaluated |

When *Pyxis arachnoides* was in Appendix II, quotas were allocated only in 2000 when a quota of 1,000 animals was imposed. Subsequently, and before its inclusion in Appendix I, it had a zero quota. Before the quota was applied in 2000, despite being listed in Appendix II, it was not subject to any restrictions and made it possible for many stakeholders of the sector to become rich, as will be seen in the third part of this report.

This sector affects both local trade (for meat consumption), national trade (bred in henhouses to prevent poultry disease; in gardens to cure asthma and to ward off bad luck) and international trade (as domestic animals). It is difficult to separate collection for the local, national and international markets. It seems plausible to assume that large radiated tortoises are intended for consumption (more meat) and the small ones (young radiated tortoises and spider tortoises) are intended for national and international trade. These two trade sectors do not exclude one another, that is, a large tortoise can be sold on the international market and small ones can be eaten, but this seems to be more of an exception. This is what prompted scientific authorities to suggest including *Pyxis arachnoides* in Appendix I.

The example of a dealer caught red-handed in June 2007 with three bags of tortoises demonstrated the difficulty of separating the two types of trade: two bags contained 120 small tortoises, whereas the third bag contained 46 large ones. Thus, one person can offer for sale these two types of tortoises. A question arises as to the destination of the two types of turtles: at what point do the two trade sectors split up? This question has not been answered because all re-sellers refused to be interviewed.

There are two types of collectors in this trade sector: on one hand, collectors of Vezo ethnic origin, who transport live tortoises in dugout canoes from Anako, Saint Augustin to Tulear; and on the other hand, collectors from the territories of the Ampanihy region who transport dead turtles (smoked meat) in carts. The issue addressed here is trade on the coast since there was not enough time to look into inland trade.

According to one interlocutor (these data must be double-checked), about 20 dugout canoes share the work: some travel between St. Augustin and Anakao, others between Anakao and Tulear. Tortoises are collected and placed on their backs while waiting for the orders. Transport takes place every day except when the sea is rough and during a waxing moon (in other words, about half of the year or 182 days). A dugout canoe reportedly transports 20 to 25 tortoises per day. The estimated number of tortoises going to Tulear per year would be around 45,500 (182 days*10 dugout canoes*25tortoises). This result is consistent with O'Brien's estimate (2002) of the number collected by fishermen for consumption of the city of Tulear, namely 46,500 tortoises per year. According to the same interlocutor, around 20 % of these tortoises (or 9,100 per year) are

intended for foreign trade. It would be pertinent to compare these data with a review of Asian markets, and in particular the Bangkok market where the radiated tortoise is allegedly the most sold tortoise (Sheperd and Nijman, 2008).

These figures do not represent the whole sector, but only the collection carried out on the coast around Tulear. The number of tortoises collected in the whole south is a lot larger, but it cannot be estimated for lack of data.

Collectors spend several days filling up their canoes to be able to travel to Tulear. Once in Tulear, intermediaries buy these turtles and transport them home at night. A complex distribution network in the city of Tulear makes it difficult to understand the system thoroughly. Tortoises can be distributed at home, that is a seller goes directly to residents' homes to offer tortoises for sale. This way the residents do not know where the tortoises come from (if it is not from the Mahavatse I district which is known for this trade and was declared a red zone by the gendarmerie several years ago. Measures to combat this illegal trade, namely controls by law enforcement agencies with the support of NGOs, started being taken a short time ago. They have led to numerous arrests which have driven this trade even more underground.

For the international trade, dugout canoes can take tortoises to a boat in high seas where delivery takes place. Malagasy control officials can do nothing to stop this traffic. Sometimes it is uncovered in Mayotte or La Réunion when boats are searched.

Control officials are powerless in two ways: on one hand, they do not have the necessary equipment to carry out controls in high seas (only the port gendarmerie has a small boat, but it often has no fuel to take it out to sea); on the other hand, they are caught up in family and lineage networks which prevent them from carrying out arrests.

Significant transit is also carried out by a truck then an airplane (at least at the end of the eighties), and by bush taxis.

This sector seems to have a very hierarchical structure; it is controlled by people in good government positions who are, therefore untouchable. For this reason, the only known cases of blatant violations concern collectors, which does nothing to dismantle the wider network for which they work.

Animal and plant collectors in the legal sector say that they continued collecting tortoises even after the legislation was reinforced. Thus, legal and illegal trade seem to be interwoven throughout the sector. Traders justify the fact that they trade illegally arguing that an unregistered animal costs less and involves more risk-taking, which is not profitable. However, a recent example (March 2008) of a trader who had sent parcels with illegal animals which were then found in Johannesburg confirms the link between legal and illegal sectors for some traders. Lastly, in Europe, breeders and enthusiasts have made it clear that at animal fairs, legal and illegal trade is carried out by the same seller.

There is a more opportunistic type of international trade which carries no risk for sellers: selling directly to tourists. This trade seems to be booming in Ifaty, a seaside resort 30 kilometres north of Tulear, where tortoises are sold at MGA 5,000 (whereas they cost MGA 1,000 in nearby villages), or more if sold by an intermediary (a figure of MGA 60,000 was mentioned). The Spanish nationals arrested with 48 tortoises (the case mentioned in part 1) said that they had bought them in Ifaty.

More concretely with regard to *Astrochelys radiata*, this species is found in large numbers in private hands in La Réunion and Maurice, and there are commercial breeding centres in Germany and perhaps other countries. This is why tortoises bred in captivity can be bought in France. A young animal is sold at around EUR 1,000, an adult one at EUR 3,000⁴². These sales bring no money to Madagascar, which seems to violate article 15 of the Convention on Biological Diversity which advocates sharing the benefits arising from utilization of genetic resources (these animals are endemic).

A census of turtles on the Bangkok market (Sheperd and Nijman, 2008) shows that radiated tortoises are the most marketed of all tortoises (they account for around one third of the tortoises on the market), which demonstrates the importance of this traffic.

Some traders in Madagascar are in a position to breed tortoises, but do not have the authorization to do so. Some talk about a political blockade by the CITES Secretariat; others, about the unreliability of the Malagasy administration.

Interlocutors and scientists often questioned the grounds for the inclusion of this species in Appendix I. Population estimates reach a few millions: 1.6 to 4 million for Lewis (1995) (who is very careful according to Nussbaum and Raxworthy, 2000); between 12 and 25 million for Leuritz et al. (2005) who thinks that he overestimates this population. This species, however, is reported to be rapidly declining, in particular in some sites near Tulear where only young tortoises which have not yet reached their sexual maturity can be found, which threatens the survival of the population (Rioux-Paquette et al. 2007).

Possessing rare animals is a luxury, which is why some people think that inclusion in Appendix I leads to an increase in price, which attracts traffickers and collectors and undermines conservation efforts. This seems unlikely, considering that tortoises are traded in such large numbers. Despite being illegal, this market seems to be stable and extensive.

It can be added that in Europe, final buyers are very heterogeneous, but they are becoming increasingly scientific (Nussbaum and Raxworthy, 2000). The numerous sites for exchanging advice on the ideal biotic conditions which need to be created at home in order for the animal to reproduce testify to this phenomenon. Successful breeding in captivity is a challenge in which enthusiasts are ready to invest effort and money. It would be interesting to know more about the final buyers in Southeast Asia.

⁴² <http://www.lafermetropicale.com/boutique/index.php?rub=ref&id=1073493450> on 10/11/07

Pyxis arachnoides

Only the Malagasy part of the sector has been studied. The prices set by different intermediaries who can enter the scene at any point through to the consumer would be needed to have a picture of the whole international sector of trade in tortoises. Diagram 2 below shows the average prices set by different stakeholders and the percentages of the final price they represent. These prices do not take into account the different expenses related, *inter alia*, to shipment and taxes. They concern legal trade in *Pyxis arachnoides*, that is, prior to the year 2000 when quotas were issued, followed by a complete ban on the sale of this species.

Diagram 4: Legal trade in *Pyxis arachnoides* from the collector to the final consumer



3.4 Assessment of the policy and of its impact

The action plan mentions that a national policy on trade in species of wild fauna and flora must be elaborated. Nevertheless, the various measures adopted in the course of the last two decades testify to the fact that this type of commerce has been taken into account more or less fully:

- Environment Charter, 1990 ;
- Environmental programmes adopted between 1990 and 2002, which is an environmental protection and conservation phase⁴³;
- Forestry policy elaborated in 1997;
- National biodiversity management strategy, 2002;
- Law 2005-018 of 17 October 2005 on wildlife trade, and its application decrees, which constituted a major step forward in the implementation of CITES;
- At present, the « Madagascar Action Plan », commitment No. 7 of which is aimed, *inter alia*, at raising the economic value of biodiversity while ensuring its rational utilization, which should contribute to the economic development of Madagascar.

The period from 2003 until now is characterized by the initiatives of the Malagasy authorities to implement CITES with appropriate management tools. In addition to carrying out an assessment of the costs and advantages of wildlife trade for the Malagasy Government and the local communities, the CITES political framework is comprehensive enough to be able to move on to the actual implementation of the Convention. Of course,

⁴³ PEI, PEII, PEIII

wildlife trade is very profitable for traders, but the profits which go to hunters, collectors and local communities remain minimal. This review, therefore, could serve as the basis for the revision of texts regulating taxes on wildlife trade. The results of the review should help ensure the fair distribution of direct and indirect costs of and profits from the resources in this sector.

3.4.1 Policy relevance

i. Legislative

The wider trade policy can be applied to all types of resources:

As far as the technical implementation of the Malagasy wildlife trade policy is concerned, Madagascar has a more or less comprehensive organizational structure because it can take into account all types of existing resources even if it is split up among various institutions, departments and services. The objectives related to CITES and to forestry resource management are entrusted to the Ministry of Environment, Water, Forests and Tourism. Those related to the management of fishery resources not listed in CITES Appendices are entrusted to the Ministry of Agriculture, Breeding and Fisheries.

Technical control services providing assistance to the two ministries are also in place: a centre for monitoring fishing; a mobile control unit with its regional branches; a forestry department in regional offices and stations which are divisions working in small localities outside the regions, the Customs services in airports and gendarmerie and police at the territorial level.

Devoted to the protection and development of wild species:

CITES is based on trade which is not detrimental to the survival of species. As can be seen from the Malagasy texts governing wildlife trade, the policy has always been accompanied by a philosophy of conservation and protection of the species in question; for example, the texts regulating: hunting and the protection of wild species in 1960; fishery resources in 1993; forestry resources in 1997; and even the protection and regulation of trade in several species, including lemurs, butterflies, crocodiles, tortoises and orchids. It has also been pointed out that when the policy is reviewed, species (mostly animals) are classified to ensure their protection.

An incomplete policy:

Although the above-mentioned measures are in place and being applied, Madagascar has encountered a few problems which have had an adverse effect and have tarnished the image of the Malagasy wildlife trade : exceeding quotas, illegal trafficking, setting quotas which are not scientifically justified... Measures adopted by the international community were necessary to help Madagascar limit its rate of export during some periods: the reduction of the number of chameleon and *Phelsuma* species which could be exported from 1994; the repeated refusal of the European community to allow the import of several species of fauna and flora (*Uroplatus*, *Mantella*, *Pachypodium*,...). This reflects a

lack of content and a failure to implement the policy. There are no accompanying measures to correctly apply the provisions adopted and officials lack the will to implement them.

In addition, the management policy for these resources is not kept up to date with the knowledge of biodiversity. During the start-up period of the Convention, only the sectors of trade in species well-known for their exploitation were monitored and only species known as distinct and characteristic of the Malagasy biodiversity were protected. Many exported species were overlooked, including chameleons, green lizards, mantillas... Thus, despite the existence of technical support institutions, policies contained technical gaps; the data are more favourable for conservation than for trade.

There is still a major gap in the policy at the national level. Very few texts on the local, regional and national measures have been compiled and almost all the measures adopted are related to export. As a result, many sectors at the national level are difficult to manage. Crocodile management can be taken as a specific example: this is a species managed by CITES and therefore protected by the legislation. The reality in the country, however, does not reflect this situation. First of all, because it is multiplying, the rural population is always asking for it to be classified as a harmful animal (which can be hunted at any time and by any means). In addition, the informal sector of the local trade in skins and finished products cannot be managed for the time being and is beyond the capacities of control officials.

It should also be added that, although formally relevant, the various Malagasy laws adopted since the nineties are very much influenced by, or even replicate foreign texts, in particular French texts. It is, therefore, deplorable that these new texts do not necessarily take the Malagasy context into consideration. This makes their implementation a lot more difficult because their bases are not always well assimilated. It has also been pointed out that several texts have rarely been applied and sometimes no one was aware of their existence. This applies, for example, to a decree on forest tree seeds which is only applied by the *Silo National des Graines Forestières (SNGF)*.

ii. Institutional

For each policy there is an institutional and/or organizational mechanism which has been assigned to it by the State.

The Ministry of Environment, Water, Forests and Tourism pays all the expenses related to the national policy on international trade in CITES and non-CITES wild forest species. In each region, regional departments and offices are part of the Ministry's policy implementation structure. It is in charge of administrative management, coordination of activities of supporting organizations, liaison with the CITES Secretariat...

The *Observatoire National de l'Environnement et du Secteur Forestier (ONESF)* is an institution attached to the Ministry of Environment, Water and Forests. On the basis of the observations made, it issues recommendations related mostly to control measures.

Monitoring departments: tasks related to monitoring the traffic, transport, import and export of these wild resources is carried out by several actors, including national gendarmerie, national police, coast guards and the Customs. Their role consists in checking whether products satisfy requirements and are accompanied by genuine documents issued by the Ministry of Environment, Water, Forests and Tourism.

The Scientific Authority is a key institution in providing technical support for the decisions of the Management Authority. The permanent secretariat is concerned with the relations among all the stakeholders in the implementation of CITES and has an operational budget.

The Ministry of Agriculture, Livestock and Fisheries is in charge of the national policy on non-CITES fishery resources. In addition to the gendarmerie, the national police, the coastal guards and the Customs officials, this Ministry has a separate control service which monitors different piscicultural centres, fishery resources, fishery trade and all fishery activities on the entire national territory. It also has a technical monitoring structure which helps it to comply with the norms of various centres (fishing season, size of fry, grading...).

All species transferred from one border to another, regardless of whether they are listed in CITES Appendices, must undergo controls at the veterinary or phytosanitary department to ensure compliance with health standards.

Notwithstanding the existence of these structures and the distribution of tasks among the various ministries, the implementation of the policy requires more resources and staff in order to reinforce the adopted measures. Owing to a lack of staff, illegal trafficking and trade continue both at the national and international levels. Reports of crimes related to wildlife trade, illegal utilization of precious wood, and the like, continue. Moreover, owing to the huge size of the island, many illegal acts are committed outside the field of vision of control officials and, for the time being, it is not yet possible to use the assistance of the population in reporting these crimes because the people are unaware of the value of wild species.

In general, a species is traded illegally because it is expensive at the international level. Listing a species in an Appendix can encourage some “clients” to become greedy and therefore lead to “an explosion of prices on the black market”. Traders, obsessed with profits, will choose to trade species the export of which is prohibited. This phenomenon encourages corruption among all stakeholders.

The State must take measure to accompany the current decentralization and devolution regime. The structures which exist at the central level should also appear in the 22 regions, which requires the recruitment of qualified officials. Many administrative tasks should be clarified to avoid further errors in the reform of the trade policy because most officials do not master their wildlife management roles.

3.4.2 Consistency

Internal consistency of the national wildlife trade policy and CITES:

The national trade policy has been in place since the sixties. This can be seen from the legislative texts adopted between 1960 and 1974, which impose royalties on trade in species. With the entry into force of CITES, which Madagascar ratified in 1975, it can be seen that these are two complementary policies. The start-up of the CITES implementation, however, was more advanced than the measures adopted earlier because these measures had not taken into account the state of the wild population and it can even be said that through its activities and philosophy, CITES directed the initiatives taken for its implementation. Madagascar's accession to the Convention, however, only divided the wildlife trade which already existed in the country.

The problems linked to the management of marketed species were further highlighted during the period between 1990 and 2002. Despite the consistency of the implementation of the Convention with the Malagasy environmental policy, many species (chameleons, crocodiles, orchids) were poorly managed, which was aggravated by the Malagasy political situation at that time because the fate of species was being decided by politicians, not scientists. These facts are confirmed by the moratorium measures on the export of in species towards mid-1990s and again in 2002.

The period after 2002 was marked by the Review of Significant Trade in the country and the elaboration of an action plan⁴⁴ (2003) which brought the Malagasy legislation into line with CITES with the adoption of Law 2005-018 of 17 October 2005 on international trade in species of wild fauna and flora, Decree 2006-097 of 31 January 2006 on the implementation of this law, and Decree 2006-098 of 31 January 2006 classifying species of fauna according to their conservation status. Consistency is also ensured by the establishment of domestic CITES structures (Scientific Authorities, permanent secretariat, CITES Committees...).

Consistency with other current policies:

Before 1975, the only ordinance in force was Ordinance 60-126 of 3 October 1960 on the protection of fauna and the regulation of hunting and fishing on the Malagasy territory. Other texts were related to penal provisions which supported this policy, such as Ordinance 60-128 of 3 October 1960 on measures against violations of forestry legislation, hunting, fishing and environmental protection, Law 71-006 of 30 June 1971 establishing the right of exit for animals and orchids. Other measures were taken to ensure the application of these laws.

The period between 1975 and 1990 was characterized by the implementation of the ratified Convention. The CITES implementation and the appearance of other ordinances on phytosanitation and the export policy supported earlier texts. Moreover, CITES Appendices were published and Appendix I was applied (Order 760-80 of 25 February 1980). Thus, decrees and implementing orders were issued for several measures aimed at

⁴⁴ Plan of action to reform wildlife trade in Madagascar

reinforcing the implementation of CITES in Madagascar (this applies to tortoises, crocodiles, etc.). Since this was the start-up period of the Convention, however, it was difficult to manage the various resources which were being utilized.

Between 1990 and 2002, wildlife trade management was influenced by the environmental policy. It was during this period that, *inter alia*, the Environment Charter, regulations on the utilization of fishery resources, the forestry policy and environmental programme I were introduced. Despite the CITES policy which governed the species listed in the CITES Appendices, the State was aware of the need to manage other forestry and fishery resources.

The utilization of all natural resources on the Malagasy territory was indirectly regulated by the texts listed in section 3.2.1 above.

This period was marked by efforts to improve the measures being implemented and to reinforce the management of already known sectors, such as crocodiles, decorative plants, medicinal plants...

The period after 2002 was above all marked by reforms of the Malagasy legislation aimed at bringing it into line with the CITES recommendations. The objectives of the wildlife trade policy match the above-mentioned challenges of Madagascar Action Plan (MAP), stipulated in Commitment 7, challenge 2 and MAP 5. At the international level, the objectives of the poverty reduction strategy coincide with the Millennium Development Goals (MDGs).

Nevertheless, the place of wildlife trade in the overall State policy remains problematic. The wildlife trade policy and CITES, which are too sector-based, are not accorded sufficient attention. The Malagasy State gives priority to problems which are directly linked to poverty, which makes wildlife trade seem of secondary importance, whereas in reality this is a promising sector which can become a growth factor. Thus, there is indifference and negligence on the part of the political leadership. This is reflected in the fact that the means and resources allocated to the proper functioning of wildlife trade are largely insufficient.

This insufficient importance is also reflected in the fact that forestry products other than wood are discredited and are defined by law as “secondary products”.

In addition, nothing is being done to raise public awareness of wildlife trade and to promote those sectors which would encourage the general public and the authorities to accord more attention to this trade.

In the absence of a broader policy on wildlife trade, problems related to species are dealt with on a case-by-case basis and there are many micro-policies. There are currently several texts on different species (butterflies, tortoises, crocodiles, etc.). It has been observed that a strict regulation on species is always issued only when a situation of

emergency arises and the species is in danger. Thus, there is a multitude of texts related to wildlife trade.

3.4.3 Efficiency

Even if Madagascar's policy is becoming more consistent, measuring its efficiency will make it possible to evaluate the extent to which it has been implemented. Listed below are a few positive and negative aspects which can serve as indicators for this evaluation.

Ratification of the Convention in 1975:

Once foreign trade has been regulated, it has to be pointed out that it is not the main risk factor for wild species.

Positive aspects: Regulations at the international level have made it possible to return the Malagasy products which had been exported illegally. Several species have been classified according to the extent to which they are threatened, which has facilitated their protection. Researchers and NGOs have assisted the authorities with species management.

Negative aspects: Nevertheless, the Convention was not being fully implemented in Madagascar and therefore remained inefficient in several regards. This inefficiency stems from the human, material and financial resources but, above all, from the lack of motivation of each stakeholder. The promotion of species through CITES has resulted in inexperienced, or even unprofessional dealers rushing towards this new sector. This explains the excessive and irrational exploitation with minimum profits leading to adverse effects on the wild populations. At the local level, species are given very little value. According to one collector, for example, the price of a serpent sold on the international market is 100 times higher than the local price.

The 2002 moratorium on wildlife exports

Positive aspects: The moratorium was the response to the general carelessness of the time, which was aggravated by the political crisis of 2002. It was possible to contain irregularities, which probably had a positive impact on the environment because the population had other concerns.

Negative aspects: From the economic point of view, this moratorium constituted six months of lost earnings for all stakeholders in all sectors of the trade chain. This explains the deterioration of social welfare. Given that in 2002, Madagascar was going through an economic and political crisis characterized by a general strike, data on illicit trade during this period, in particular the prices of species, are not available.

The 2003 action plan

The action plan sought to improve the situation. To date, 80 % of the goals set have been attained.

The environment certainly benefits from the restructuring of the system. First of all, through a gradual improvement in the level of professionalism of traders and collectors who become more aware of the advantages of more rational utilization which can be achieved by improving the centres where animals and plants are held, reducing mortality rate during collections in the wild, elaborating standards for reproduction and breeding centres and the transport of species, and procedures to be followed when exporting species...Moreover, the studies into certain species (*Pachypodium brevicaule*, *Aponogeton*, *Mantella*, crocodiles...), carried out by research students and professors, in cooperation with the University of Antananarivo and other universities, both American and European, have made it possible to create a reliable database, which makes it easier for Scientific Authorities and the Management Authority to set quotas.

4. Conclusion, recommendations and action plan

The national wildlife trade policy review in support of CITES has made it possible to conclude that wild fauna and flora remain products of secondary importance in comparison to wood in Madagascar. This can be seen from the degree of priority attached to various activities of the forestry administration which is also a CITES Management Authority. This is why showing that this sector can be profitable for the country is essential.

On the other hand, the different phases of implementation of the Convention are supported by regulatory and legal provisions. The problem, however, is that owing to such factors as ignorance, unawareness, lack of will, corruption and, above all, insufficient resources for their implementation, these regulations are sometimes applied only partially, or not at all. Moreover, since there is a multitude of stakeholders contributing to the system, the difference in the level of understanding and of priority for each one is also a hindering factor.

Nevertheless, the following can be said about all the measures adopted:

- A failure to minimize changes in administrative staff means that the new staff do not know the system in place well enough and that the decisions taken are not always in line with the measures adopted earlier;
- As a result of insufficient participation of the local communities in the propagation of species, species are continuously collected in the wild, which leads to a significant reduction in the wild population;
- A lack of specific budget line for the resource management policy leads to frequent interventions by international donors, which would hinder the implementation of any action plan. The Malagasy political programmes in general greatly depend on foreign

assistance. Yet, donors and the country do not necessarily always see things the same. They have different priorities; for example, in the environmental field, donors advocate giving priority to conservation, whereas for the Malagasy people reforestation is a precondition for conservation because wood remains one of the main sources of income (woodwork, charcoal, firewood...) of the predominantly poor rural population. At the same time, while there is plenty of funding for studies, reviews or the elaboration of action plans, finding donors for the implementation of their results is difficult.

As far as conservation is concerned, its objective is achieved when a species is listed in Appendix I. The increase in trafficking, however, is deplorable, because price of species at the international level has soared (EUR 5,000 to 10,000 for *Geochelone*). From the economic point of view, this is in line with the law of supply and demand because the species becomes rare. The solution is to envisage breeding this species in order to meet demands of all the stakeholders and to create competition for trafficking.

The Malagasy political system is corrupt (see CSI data in “National Integrity System: a study for 2007”⁴⁵ and Transparency International: Corruption Perceptions Index for Madagascar = 3.2 in 2007⁴⁶). Moreover, high-level officials are well known for interfering in the consideration of cases and in criminal proceedings, and wildlife trade is no exception, which leads to an impartial treatment of trade stakeholders and highlights the malfunctioning of the system.

The Malagasy wildlife trade policy is generally relevant to and consistent with other existing policies, but the resources available for its implementation do not match its ambitions, which is currently undermining its efficiency.

Whatever the case may be, the last phase of the review shows a major effort to improve the situation which is not yet easy owing to the various reforms being carried out in the country.

Action plan

The overall goal is to « Reorganize the management of marketed and marketable species » in line with the aspiration of Madagascar, described in MAP (activity 5, challenge 2, commitment 7).

I. Research and environmental monitoring

Goals:

- To improve the understanding of the state of species in their habitat as well as the state of the ecosystem and its processes in order to protect them more efficiently;

⁴⁵ Website of *Comite pour la Sauvegarde de l'Intégrité* (Integrity protection committee) – National survey : www.sni.mg

⁴⁶ Corruption Perceptions Index for 2007 analyses the degree to which corruption is perceived to exist in the public sector of 180 countries and territories. This is the largest number to have ever been covered by CPI. This is a combined index based on 14 different polls and surveys conducted by independent institutions. It orders countries according to a scale from 0 (high level of perceived corruption) to 10 (low level of perceived corruption)Ö www.transparency.or

- To understand the challenges of conservation and sustainable utilization of wild species.
1. To adapt research and studies to trade needs. They will have to be centred round marketed and marketable species. This research will enable quotas to reflect the reality in the field by improving the data collection system and data monitoring. The research will also help develop sustainable utilization systems and promote the “ranching” and “farming” of species.
 2. **To enhance biological, ecological and biogeographical data on marketed and marketable species.** This involves pursuing (or expanding) the study of two (02) species of fauna and eight (08) species of flora per year. Which allows to:
 - To review the study of CITES species and not only of exploitable CITES species;
 - To update information concerning all marketed species.
 3. **To set up regional networks of scientists and/or researchers.** These regional networks will play a very important in organizing work, updating the knowledge and data at the regional scale, promoting cooperation, and supporting the decentralized services involved in the implementation of CITES (national gendarmerie, Customs, CIREEF, etc.). Moreover, they will reinforce scientific cooperation with conservation institutions scattered in various regions.
 4. **Transmit environmental information** to all stakeholders. (A platform for data exchanges and consultations among actors)

II. Sustainable utilization of species of wild fauna and flora

Goal: To improve wildlife management in order to ensure its sustainable utilization.

To fix systemic environmental objectives centred round the quota system, the terms of references of traders and the state of wild populations in nature.

This will allow:

- To determine the types and levels of authorized activities;
- To find adequate joint responses which are accepted by conservationists: NGOs, protected area managers (COBA*, Communes, PNM ANGAP, etc.)... ;
- To consider the norms (quota system, export calendar...);
- To review the marketing aspect of marketable species (on the basis of the quota system, marketable species, cooperation between traders and the Management Authority, the lowest value on the international market, etc.);
- Review the terms of reference (as an indication: hire permanent collectors/hunters, improve the level of professionalism of collectors/hunters, breeding system, etc.)
- To review the possibility of returning the species confiscated abroad;
- In the case of moratoriums, to create a system which allows to secure investment made by traders (possibility of destocking, etc.).

- To set deadlines and conditions for lifting moratoriums which truly hinder the development of wildlife trade in Madagascar.

III. Good governance

Goals :

- To find joint and suitable solutions to eliminating the obstacles to good governments ;
 - To improve management for the purpose of conservation ;
1. A CITES steering committee will have to be established. Its main role will be finding all the necessary funds for the proper implementation of CITES in Madagascar and for all the projects related to wildlife trade in support of CITES (scientific research, inventories,...).
 2. CITES should have access to the National Forest Fund, which is managed by the Ministry of Water and Forests, since it supplies a large portion of this fund.
 3. In order for the wildlife trade policy to function, the support of decision-makers and donors must be obtained as a matter of priority. Thus, the challenge consists in demonstrating that this sector has a lot of potential and that it can be vital to development and the reduction of poverty.
 4. To establish a clearing house with a view to facilitating procedures related to trade in species of fauna and flora and improving transparency. It will be composed of officials from different ministries concerned, who will work in one place, independently from other institutions in order to dedicate all their efforts to this sector. This clearing house will speed up and simplify the procedure always with a view to promoting wildlife trade.
 5. To adapt to Madagascar's current phase of decentralization and devolution. The control system will have to be reinforced by involving all decentralized services and territorial communities, with a clear distribution of common and specific tasks related to wildlife trade and a more adequate communication and information system. Thus, information campaigns (with the help of visual aids) on wild species and their sustainable utilization tailored to each local community must be conducted in order to promote increased awareness and sensible conduct.
 6. To retain management procedures: methodology for monitoring permits, procedure for authorizing the export of specimens, a follow-up mechanism for the action plan (CITES committees, annual report to the CITES Secretariat on the progress made, etc.)...see the previous action plan and the *NC*.
 7. To hire permanent staff (technical staff) in order to avoid gaps in the knowledge and management of CITES as well as to ward off the consequences of constant

changes of leadership (minister, secretary-general, directors, section heads, service heads, etc.)

8. To improve the consistency and coordination of work carried out by stakeholders: set up a communication platform which includes all stakeholders in order to create a cooperative atmosphere for the promotion of wildlife trade.

In this regard, the aim is:

- To mobilize all stakeholders;
 - To improve the efficiency and consistency of the trade policy;
 - To reinforce technical capacities of the stakeholders in decentralized services.
9. To transmit information, in particular official newspapers which contain the texts of laws. Furthermore, to improve the communication system: telephone, fax, Internet, BLU, etc.
 10. To reinforce or elaborate preventive as well as some suppressive measures.

As an indication:

Preventive measures:

- Enhancing training, awareness-raising and education programmes aimed at stakeholders, the local population (local community) and the general public with a view to:
 - o Improving the understanding of trade ;
 - o Clarifying and simplifying regulatory texts;
 - o Reinforcing local and regional competencies in efficient trade monitoring and management;
- Taking into account environmental disciplines or biology when recruiting Customs officials.

Suppressive measures:

- Equipping ports and airports (carrying out long flights) of Madagascar with organic scanners;
- Improving the system of coastal control of Madagascar (the coast is around 5,000 km long).

11. Developing regional and communal royalties and refunds for trade in species of wild fauna and flora.

IV. Legislation

1. To update the texts that govern wildlife trade and to adapt them to the context of the country. This involves compiling various fragmented texts on wildlife trade and integrating into these texts an understanding of the Malagasy culture in order to make them more suitable for the Malagasy people. This measure should above all make it possible to master domestic trade.

2. To revise the texts, in particular the ones on:
 - The classification of the Malagasy flora according to the national conservation status;
 - Trade in samples/specimens of species of wild flora (a part of the plant: leaf, fruit, trunk, etc.).

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- Décret 61-096 du 16 février 1961 répartissant en 3 catégories les oiseaux et les autres animaux
- Décret 69-085 règlementant la chasse au papillon
- Décret 77-026 du 24 mai 1976 portant publication des annexes révisées de la CITES
- Décret 83-108 du 31 mars 1983 complétant la liste des animaux sauvages menacés d'extinction
- Décret 84-445 du 14 décembre 1984 portant stratégie malagasy pour la conservation et le développement durable et la commission nationale de conservation pour le développement
- Décret 97-1200 du 2 octobre 1997 portant adoption de la politique forestière
- Décret 98-781 du 16 septembre 1998 fixant les conditions d'application de la loi 97-017 portant révision de la politique forestière
- Décret 97-782 du 16 septembre 1998 relatif au régime de l'exploitation forestière
- Décret 99-954 du 12 décembre 1999 relatif à la mise en compatibilité des investissements avec l'environnement
- Décret 2004-299 du 3 mars 2004 fixant l'organisation, le fonctionnement et l'attribution du Fokontany
- Décret 2006-097 du 31 janvier 2006 fixant les modalités de l'application de la 2005-018 relative au commerce internationale des espèces sauvages
- Décret 2006-098 du 31 janvier 2006 portant publication des annexes de la CITES
- Décret 2006-400 du 13 juin 2006 portant classification de la faune en animaux protégés, nuisibles et gibiers

VI - Orders:

- Arrêté 2023/59 du 14 mai 1959 fixant les redevances sur les permis de chasse au papillon e permis de chasse spéciale au papillon pour touriste
- Arrêté 760/80 du 25 février 1980 portant interdiction de la vente et de l'achat de tortue et de crocodile empaillée, ainsi que des produits obtenus à partir de ces animaux, en vue de leur exportation
- Arrêté 1046/86 du 1^{er} mars 1986 fixant les redevances sur permis de chasse commerciale, autorisation de collecte et de spécimens de la faune et flore
- Arrêté 2915/87 relatif à la conduite de l'exploitation des produits de la forêt : plante médicinale et industrielle forestière
- Arrêté n° 11 832/2000 du 4 Avril 2000 relatif à l'interdiction d'exportation de bois de rose et de bois d'ébène
- Arrêté 12702/2000 du 20 novembre 2000 en application de l'article 22 et 25 du décret 98-782 relatif au régime de l'exploitation forestière accompagné du plan d'aménagement dans les délais impartis stipulés à l'article 8 du décret n°98-782 du 16 septembre 1998
- Arrêté n° 12704/2000 du Ministère des Eaux et Forêts, en date du 20 novembre 2000 qui interdit toute activité d'extraction de ressources ligneuses dans les zones sensibles
- Arrêté 6833/2001 du 28 juin 2001 portant fixation des redevances forestières sur permis de chasse commerciale, autorisation de collecte et exportation des spécimens de la faune et la flore sauvages
- Arrêté 3032/2003 du 13 février 2003 portant création, rôle et attribution de l'autorité scientifique

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