

FINAL PROJECT COMPLETION REPORT

Organization Name: WWF-Ecology Training Program

Project title: Study Tour to Washington DC for Malagasy Scholars from the University of Antananarivo, Madagascar

Report of visit to Washington DC, JULY 7 to 18 2002

Dr. Daniel Rakotondravony

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Mss Regis Soarimalala

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Objectives of the visit:

- Identification of voucher specimens of small mammals from the Rapid Assessment Program – Conservation International in the forest corridor Zahamena-Mantadia National Park, eastern Madagascar at the Smithsonian Institution Museum

- Visit to the Smithsonian Institution, National Museum of Natural History
 - visit to the African arts,
 - visit to the Smithsonian National Zoo,
 - visit to the Laboratories of Analytical Biology at the Museum Support Center (MSC), Smithsonian Institution

- Bibliographic work at the Library of the Smithsonian Institution

- Bibliographic work at the Library of Congress

- Give a seminar at Conservation International office, relative to the recent development of the biodiversity research program and government activities on the conservation of environment.

- We added to the objectives: visit to WWF office, and visit to the Ambassador of Madagascar.

Results of the visit:

- Identification of the voucher specimens of small mammals

Site Sahanomana

Nesomys rufus

Eliurus tanala

Site Fotsihalanana

Gymnuromys roberti

Eliurus tanala

Eliurus grandidieri

Microgale cowani

Microgale drouhardi

Microgale fotsifotsy

Microgale gymnorhyncha

Microgale longicaudata

Microgale parvula

Microgale talazaci

Microgale thomasi

Site Saharay

Eliurus petteri

Microgale drouhardi

Microgale parvula

Microgale principula

Microgale thomasi

- Bibliographic works

Focus on biogeography, Ecology, Data analyses, Conservation Biology, Mammalogy, Ornithology, Crayfish, and Parasites of crayfish.

- Contact with researchers at Smithsonian Institution

Nooren Tuross, Director, Core Laboratories

Leonard P. Hirsch, Senior Policy Advisor

David L. Pawson, Senior Researcher Scientist

Cheryl Bright, Invertebrate Zoology, Collection Manager

Cynthia Ahearn, Echinoderm Department

Michael D. Carleton, Mammal Division

- Contact at Conservation International

Nina Marshall, CEPF Africa Grant Director

- Contact at WWF-US

Carroll Richard, Responsible of Africa- Madagascar Division

TALKS AT THE CONSERVATION INTERNATIONAL OFFICE, WASHINGTON, DC.
JULY 17TH, 2002.

**SUMMARY OF THE RESEARCH EFFORT DURING THE PAST DECADE IN
MADAGASCAR**

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Madagascar is well known for its remarkable variety of habitats, from rain forests to subdesert spiny bush forests and its biodiversity with a high level of endemism. But this remarkable heritage is under threat of loss due to the high rate of habitat destruction. That is why, Madagascar is now among the high priorities of conservation in the world. Large number of organizations (governmental and non-governmental) have undertaken conservation actions. Natives and scientists from different countries are interested on its richness.

The 12 last years have witnessed an impressive expansion of scientific knowledge than in any decade before regarding Madagascar, resulting from a variety of sources:

- Symposia focused on the Island's history and biological diversity (Ganzhorn *et al.*, 1997; Goodman & Patterson, 1997; Lourenço, 1996, 2000),
- long-term field studies on a variety of plants and animals at several biological research stations (e.g. Ganzhorn & Sorg, 1996, Wright, in press),
- a wealth of behavioral, ecological, and taxonomic studies on particular organisms;
- rapid biological inventories of poorly known forested areas on the island (e.g. Goodman, 1996, 1998, 1999; Goodman & Langrand, 1994; Langrand & Goodman, 1997; Rakotondravony & Goodman, 1998; Ratsirarson & Goodman, 1998). During this period,

about 17 monographic books and numerous manuscripts have been published, and numerous popular guides to its splendor. There are at least 6 guides so far (e.g. Dransfield & Beentje, 1995; Glaw & Vences, 1994; Langrand, 1990, 1995; Morris & Hawkins, 1998).

This nearly exponential increase in knowledge about Malagasy plants and animals has enabled scientists to synthesize new ideas associated with the biological patterns of the island to begin to understand, for example, the effect of ecological change during recent geological time or the effects of forest fragmentation on some organisms (e.g. Langrand & Wilmé, 1997).

One of the crucial uses of the newly available information is to strengthen conservation activities to safeguard what remains of this unique biota.

Even with these advances in comprehending the extant fauna and flora, major gaps remain in the basic knowledge of natural history and distribution of the great majority of Malagasy organisms.

Currently, some Malagasy students, for their thesis, conduct studies on biogeography of some taxa of vertebrates of the remaining forest fragments on the highlands and the western region. We hope that the results of their study will provide new information in this field.

Further, a remarkable number of taxa new to science, including subfossil and living vertebrates, are being described each year from Madagascar.

For example:

- In the decade between 1990-1999, 102 species of amphibians and reptiles, of which 46 species and 1 subspecies of amphibians, and 56 species and 6 subspecies of reptiles (Glaw & Vences, 2000);
- 2 genera and 6 species of Micro-mammals;
- 9 species of Lemurs;
- 1 genus and 3 species of living passerine birds and about 4 species of subfossil birds.

But a large number of new species have already been discovered and identified, but remain to be described. This is especially true for the amphibians in which 42-68 species await

description or resurrection. Altogether, 66-102 amphibians and reptiles are waiting to be described and resurrected. For small mammals, about 5 species are waiting to be described. The problem is that many species are only known from single specimens, indicating a generally poor state of knowledge (Glaw & Vences, 2000).

Because of the continued high levels of habitat destruction (Whitmore, 1997), and the fact that very little of the original forest cover is left, this present decade may be the last possible time to document the remaining patterns of biotic diversity for numerous sites on the island. Rapid inventories of previously unstudied or poorly known-forested sites are critical to this effort. Finally, there is an urgent need to accelerate the research intensity and to intensify the attempts of protecting the remaining natural habitats in Madagascar.

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RECENT DEVELOPMENT IN CONSERVATION IN MADAGASCAR: A MALAGASY VIEW RECENT DEVELOPMENT IN CONSERVATION IN MADAGASCAR

Dr. Daniel RAKOTONDRAVONY & Dr. Jeanne RASAMY

Presentation at Conservation International Office in Washington DC; July 07, 2002 by Dr. Daniel Rakotondravony and Dr. Jeanne Rasamy, from the Department of Animal Biology, The Faculty of Science, University of Antananarivo, Madagascar.

INTRODUCTION

The adoption of the Malagasy Environment Charter on 1990 permitted the establishment of the National Environmental Action Plan (PNAE).

Also, following the adoption of this law and the promulgation of the decree on the Compatibility of Investments with the Environment (MECIE Decree), any public or private investment projects likely to have adverse environmental impact should be subjected either to an Environmental Impact Assessment (EIA), or to an Environmental Commitment Program (ECP).

Pursuant to the legal and regulatory provisions referred to above, the Ministry responsible for the environment, with the support of the National Environmental Office (ONE) elaborates or contributes to the elaboration of environmental technical guidelines, included in the General Directive below.

National Environmental Action Strategy

- ◆ Includes an Environmental Action Plan (EAP) that contains 3 phases of 5 years each (PE1: 1992-96; PE2: 1997-2001; PE3: 2003-2007)
- ◆ Objectives PE1:
 - ◆ Establish legal and institutional frame
 - ◆ Educate, Form and Sensitize on Environmental problems
 - ◆ Protect Biodiversity
 - ◆ Conserve Soils and ameliorate lifestyle in rural area

- ◆ Secure land owning
- ◆ Enhance EAP by development of research, laws, data base, and environmental impact assessment.

- ◆ Objectives PE2:
 - ◆ Develop multi-use forest systems
 - ◆ Develop Protected Areas and Ecotourism
 - ◆ Develop Water and Soil Conservation Management
 - ◆ Develop marine and coastal systems conservation
 - ◆ Develop local sustainable use and regional management of natural resources
 - ◆ Develop strategic components such as MECIE Decree
 - ◆ Develop supporting strategic components such as Environmental Finalized Research, Education and Formation, GIS, and Environmental Information System.

Administrative Structure for the application of the MECIE Decree

- ◆ Ministry of Environment: provides Environmental Permit
- ◆ Technical evaluation committee CTE (Ministry of Environment, Environmental service of sectorial Ministries, ONE) to evaluate investments projects.
- ◆ Environmental service of sectorial Ministries
- ◆ Inter-ministerial Environmental Committee (helped by experts)
External Environmental Evaluation by NGO

Tools to make the MECIE Decree effective

- ◆ Training for members of Technical Evaluation Committee and Environmental Services
- ◆ General Directive
- ◆ Laws and Regulations

Training for the members of technical evaluation committee and environmental services

- ◆ Aim: provides knowledge to those who will evaluate documentation on Environmental Impact Assessment and Environmental Commitment Program (ECP) from project proponents, such as described in the following General Directive.

General Directive for Conducting an Environmental Impact Assessment (to be given to the project proponents)

Part I : Nature of an impact

- ◆ 1.1. Characteristics of an Environmental Impact Assessment
- ◆ 1.2. Legal, Regulatory and Administrative requirements (Environmental Chart, MECIE Decree, EIA, ECP)
- ◆ 1.3. Objectives of Sustainable Development
- ◆ 1.4. Key Aspects and Scope of the Environmental Impact Assessment
- ◆ 1.5. Public Consultation and Information
- ◆ 1.6. Approach to the Preparation of the Impact Assessment

Part II : Contents and structure of the impact assessment

- ◆ 2.1 Presentation of Project Background
- ◆ 2.2 Project description
- ◆ 2.3 Description of the Receiving Environment
- ◆ 2.4 Analysis of Project Alternatives
- ◆ 2.5 Impact Analysis
- ◆ 2.6 Risk and Hazard Assessment
- ◆ 2.7 Synthesis of the Selected Project
- ◆ 2.8 Project Environmental Management Plan

PART III : Presentation of the impact assessment

- ◆ 3.1 Impact assessment report
- ◆ 3.2 Confidential information and data
- ◆ 3.3 Submission of report

National laws and regulations

- ◆ 1990: Law on Environmental Chart
- ◆ 1995 and 1996: Decree on creation of ONE
- ◆ 1996: Law on the Local management of natural resources
- ◆ 1997: Regulation on sensitive zones
- ◆ 1998: Decree on the Creation of the Ministry of Environment and definition of its attributions
- ◆ 1998: Relative land owning securement

- ◆ 1999: MECIE Decree (3 versions)
- ◆ 2000: Decree on the environmental Mediators
- ◆ 2001: Public environmental evaluation
- ◆ Several laws and regulations on key sectors including:
 - ◆ mines,
 - ◆ fisheries and aquaculture,
 - ◆ tourism,
 - ◆ roads,
 - ◆ forests,
 - ◆ water,
 - ◆ industries,
 - ◆ buildings.

International Conventions

- ◆ **Following are the International Conventions signed by Madagascar:**
 - ◆ Convention on Biodiversity
 - ◆ CITES
 - ◆ Convention on Humid Zones (RAMSAR)
 - ◆ Convention on Migratory Species
 - ◆ Convention on Vegetal genetic resources
 - ◆ Convention on climate changes
 - ◆ Convention on Ozone layer protection
 - ◆ Convention on Sea environment protection
 - ◆ Convention on sea and coasts
 - ◆ Convention on trans-frontier movement of dangerous wastes and their elimination
 - ◆ Convention on dangerous chemicals.

Conclusion

- ◆ Efforts developed by Malagasy Government to conserve Biodiversity and Environment are relatively important:
 - ◆ adoption and promulgation of many laws, decrees and regulations, including those for protecting biodiversity and environment
 - ◆ establishment of Environmental Strategy and Plan
 - ◆ creation of institutions and services

- ◆ transfer of natural resource management from public institutions to local collectivities
- ◆ Currently, evaluation of PE2 is running
- ◆ The main problems include:
 - ◆ Obstacles to the application of laws and regulations
 - ◆ Obstacles to a good development of the environmental plan persist, due to human poverty.
- ◆ PE3 objective includes integration of environmental actions in the national development plan with the hope of increased national participation. Accurate programs will be settled after the evaluation of PE2.
- ◆ We hope International Institutions and NGOs such as Conservation International and World Wide Fund for Nature continue to help Madagascar in better applying the National Environmental Action Strategy and the National Environmental Plan.

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