



United Nations Development Programme
GLOBAL ENVIRONMENT FACILITY



Date: 20 December 1999

To: Mr. Kenneth King
Assistant CEO

Attention: Program Coordination

From: Rafael Asenjo
GEF Executive Coordinator

Subject: **Prescreening of Project Concept: Mauritius: Conservation of forest ecosystems threatened by alien invasive species.**

Enclosed is a concept paper for Mauritius entitled "Conservation of forest ecosystems threatened by alien invasive species" submitted to UNDP by the Mauritian Wildlife Foundation, for GEF financing under the medium-sized projects initiative.

In accordance with the operational guidance for the preparation and approval of medium-sized projects, we are seeking an initial review by the Secretariat as to the consistency of the concept with GEF eligibility criteria and the Operational Strategy. Particular issues to which we wish to draw attention are highlighted on the attached sheet.

UNDP will consider this proposal, and the possible allocation of PDF A resources to develop a project brief, after the Secretariat ruling that it is eligible for GEF financing.

We look forward to receiving your view as to the concept's eligibility on or before 14 January 2000.

cc: John Hough. Regional Coordinator for Africa



United Nations Development Programme
Global Environment Facility



Medium Size Project Concept Clearance

Issues to be Reviewed

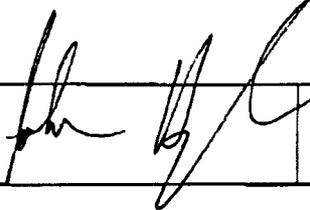
Project Title: Conservation of forest ecosystems threatened by alien invasive species

Country: Mauritius

Proponent: Mauritius Wildlife Foundation

Issues:

1. This project represents the second stage of a three stage project. The first stage was funded under the GEF pilot phase for \$200,000. It established pilot sites within one forest. A final evaluation has been completed and is available. This second phase incorporates lessons from the first phase and represents a "scaling up", addressing the entire forest in which the initial pilot sites were situated. It is to be presented as a Medium Size Project with a GEF budget of \$550,000. Assuming this second phase is successful it is anticipated that there will be a third and final phase whereby the model tested at the forest level is replicated at other critical sites on the island. Second phase cofinancing is on the ratio of 1:1 with GEF financing and it is anticipated that this would be significantly increased during a final phase.

Technical Advisor signature:		Date:	17/12/99
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Street Address: 304 East 45th Street, 10th Floor
Mail Address: UNDP-GEF, One UN Plaza, New York, NY 10017, USA.
Tel 212-906-5044 Fax: 212-906-6998.
E-mail: rafuel.asenjo@undp.org

MEDIUM-SIZED PROJECT CONCEPT PAPER	
1. PROJECT NAME: Conservation of forest ecosystems threatened by alien invasive species	2. GEF IMPLEMENTING AGENCY: UNDP
3. Country or countries in which the project is being implemented: Mauritius	4. COUNTRY ELIGIBILITY: Ratification of the CBD on 4 September 1992. Notification of participation in re-structured GEF on 4 July 1994.
5. GEF FOCAL AREA(S) AND CROSS-CUTTING ISSUES AS APPROPRIATE: Biodiversity	6. OPERATIONAL PROGRAMME/SHORT-TERM MEASURE: OP3: Forest Ecosystems
7. PROJECT LINKAGE TO NATIONAL PRIORITIES, ACTION PLANS AND PROGRAMMES:	
<p>The focus of the proposed project, the control of alien invasive species, is an issue specifically highlighted by the parties to the Convention on Biological Diversity as critical to achieving the objectives of the Convention (Decision IV/4). Mauritius prepared in 1990 a National Environmental Policy, with the primary objective to protect and manage the country's environmental assets such that their capacity to sustain development is unimpaired. Environmental awareness, education and training are listed as important activities towards achieving this objective.</p> <p>As part of its National Environmental Strategy, the Government of Mauritius is developing the second National Environmental Action Plan (NEAP II) which includes "Protected Areas and Biodiversity Management" as one of the six core strategies of the plan. The four objectives of this core strategy are to:</p> <ul style="list-style-type: none"> • halt or reverse habitat degradation • maintain species richness • prevent loss of habitats • promote understanding of the importance of biological diversity among Mauritians <p>The activities proposed under this project are highly relevant to this policy, and build on the achievements of the previous UNDP/GEF pilot project on the Restoration of Highly Degraded and Threatened Native Forest in Mauritius (MAR/93/G31) (please see section 9 below).</p>	
8. STATUS OF NATIONAL OPERATIONAL FOCAL POINT REVIEW (DATES): Endorsed:	
9. PROJECT RATIONALE AND OBJECTIVES:	
<p>Project rationale:</p> <p>Many tropical islands in the world have indigenous montane forests that are under severe threat from invasive alien animals and plants. WWF's Global 200, a collection of Earth's most outstanding and diverse habitats where the Earth's biological wealth is most distinctive, identifies the Seychelles and Mascarene Island Forests as priority areas for conservation (Mauritius, Seychelles, Comoros, Réunion and Rodrigues).</p>	

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The Indian Ocean island of Mauritius is home to a unique biota of global significance that is seriously threatened by habitat loss and invasive alien animals and plants. According to IUCN, Mauritius is considered to have the third most threatened flora of any part of the planet (after Hawaii and the Canary Islands). It is the oldest island in the Mascarene group, which also comprises La Reunion and Rodrigues. Its age, together with its geographic isolation 900 km from Madagascar, and its tropical climate, has resulted in the evolution of the island's unique flora and fauna. Mauritius is most widely known for the extinction of the Dodo in the 17th century, however, eleven native land birds still exist although most are threatened or endangered. Nine of these bird species are endemic to Mauritius.

Although only 1-2% of the island comprises native vegetation today, among the plants, there are 700 species still extant with 325 endemics. Over 100 endemic plant species are known from less than 30 individuals or are present in 1-2 small, localized populations. The reptile, mollusc and insect faunas are also rich in unique species, although some invertebrate groups are not well studied.

The Government has established a number of nature reserves, including the 6,574 ha Black River Gorges National Park, but these measures alone are insufficient because of the threat from invasive alien animals and plants. Introduced deer and pigs are preventing regeneration of native plants and disturb the ground. Monkeys and rats also damage native plants and are important predators of native birds, reptiles and invertebrates. Madagascan tenrecs and toads are also important predators of invertebrates. Introduced birds distribute the fruit of alien plants, facilitating their invasion into remnant native vegetation. Alien plant species displace and dominate the native flora, and the worst of these alien plants are capable of invading and destroying the last intact areas of canopy forest. At least 75% of the National Park is dominated by invasive alien weeds, and all the remaining patches of intact canopy forest are being degraded, apart from the small weeded and fenced 'Conservation Management Areas' (CMAs). The CMAs, comprising 40 ha in total, are restricted in size by available resources and technology and does not allow for long-term, sustainable conservation of endemic species.

A three-year pilot phase project at a cost of US\$ 200,000, "Restoration of highly degraded and threatened native forest in Mauritius" assessed the native biodiversity and trained local staff and students in techniques of biodiversity assessment and monitoring. In particular, the project:

- Reviewed and considered a set of best practices for the control of exotic plants.
- Undertook trials of new weeding methods.
- Provided training through workshops, university courses and student research projects with participation from staff from the University, NPCS, MWF and the Ministry of Agriculture and Natural Resources.
- Carried out biodiversity surveys.
- Undertook a partial restoration of the six hectare project site. This was mostly because of the unrealistic timeframe of the project. Two proposed activities were not started as they were impractical (weeding by youth groups) or inappropriate (sowing seed of rare plants). As indicated by the restoration experts in the workshop, planting (of rare species) is preferable to seed sowing. Youth groups were inappropriate for weeding activities that required consistent, safe use of undiluted herbicides and mechanical equipment including chainsaws
- Established and initiated the implementation of a monitoring programme.

An independent final evaluation of the pilot phase project was completed in May 1999, which highlighted a number of project accomplishments as well as problem areas. The final evaluation provided a helpful guide for the design of this follow-on project, building upon the lessons learned, as outlined below. Regular monitoring of the pilot phase project by UNDP complements the information contained within the final evaluation.

One of the key lessons learned from this project was emphasized by the restoration experts, which was that thoroughly trained workers should only undertake control of weeds in native ecosystems. It was clear at an early stage that the need to be flexible with the composition and availability of youth groups was incompatible with the need for training in plant identification (to avoid weeding immature stages of native plants). In addition, the faster, cheaper weeding methods being tested were likely to involve mechanical tools and the localized application of undiluted herbicides. For health and safety reasons, and for avoiding collateral damage to native plants, these methods need workers to be carefully trained. For the experimental work with weeding methods it is essential that the use of herbicide and tools is consistent across treatments otherwise the conclusions will be flawed. Again, the obvious problems with reliability and composition of youth groups made them inappropriate for this work. However, restoration of the project site and the production of a monitoring system to examine the effects of restoration on the native forest ecosystem were not feasible in three years of the pilot phase project.

The sustainability of the restored forest is the most important question in this project. While the pilot phase project developed cost-effective weeding methods, the project area still requires on-going and intensive management. In particular, the fence needs to be regularly maintained (and deer/pigs need to be killed if the fence is breached or the gate is left open), undertaking continuous poisoning/trapping of rats/cats/monkeys, and weeding every six months to remove propagules of invasive exotic plants.

These operations require considerable resources just to sustain the 24 ha Brise Fer site. This area is not large enough to maintain viable populations of all but the smallest and most numerous of the native biota. For long-term sustainability of the indigenous Mauritian biodiversity, what is needed is a "re-established self-sustaining forest ecosystem where conservation management will be minimal" (Brise Fer Forest Management Plan). This will need to be much larger than the present 24 ha site, and will need to use all available technologies to exclude or control invasive exotic species including the weeding methods developed in this project.

Project objective:

The pilot phase project should be seen as a first stage of controlling invasive exotic species from native ecosystems. This proposed project is a second phase representing a scaling up of the pilot phase project, with the objective to sustainably apply the set of best practices that are needed to control alien invasive species in native forest ecosystems. In order to do this, key areas within the National Park will need to be created where critical ecosystems and habitats are protected as fully as possible. These areas will need to be large, perhaps even several hundred hectares, and eventually there would need to be several such sites in a park of this size. At the end of this project, global benefits to biodiversity will accrue by the creation of a model for conserving remnant forests that are rich in unique species against alien invasive species for Mauritius and other countries, in particular for small island developing countries. It is expected that there will be a third and final phase to this project, with the objective of replicating this model to other native forest ecosystems of global significance for the rest of Mauritius.

10. EXPECTED OUTCOMES:

The overall outcome of this project is to demonstrate sustainable conservation methods applied to island forest ecosystems under threat from invasive animals and plants. Specifically, this project aims to have to following outcomes:

1. **Conservation of biodiversity through the sustainable control of alien invasive species.** Key areas within the Black River Gorges National Park will be established to ensure the viability of native forest species and the sustainability of removal and restoration methods. Weeding methods that are appropriate for use over large areas with good cost-effectiveness will be fully tested and demonstrated. Rare plant species and common pioneer native plants will be cultivated and reintroduced. Restoration methods will be based upon those developed in the pilot phase, and will include an animal exclusion fence adapted for Mauritian conditions. Mauritian involvement in the current biological control programmes targeting alien weeds will be undertaken in La Réunion. A detailed analysis of the response of threatened indigenous biota to the restoration will be carried out and incorporated into the adaptive management of the project area. Recovery of key ecosystem components after restoration methods applied will also have been demonstrated. (GEF: \$300,000, non-GEF: \$150,000)
2. **Development in and around the Black River Gorges National Park incorporates criteria and actions to prevent further invasion of alien species.** Development policies (e.g., legislation) and plans associated with the BRG National Park will be reviewed and criteria and guidelines for biodiversity conservation will be incorporated into these. This will include strengthening eco-tourism opportunities as one means to enhance the value of undertaking and applying conservation and restoration activities. The value of medicinal plants, agro-biodiversity resources and other important economic endemic species (e.g., *Coffea* spp) will be demonstrated. In addition to these, the project will be limited to identifying other sustainable alternative livelihood options in such a way that they represent win-win situations between local economic needs and biodiversity conservation. The implementation of these latter options would be addressed by a separate project. (GEF: \$50,000, non-GEF: \$200,000)
3. **Improved public awareness, environmental education, networking and training.** An awareness campaign will be implemented to improve the value of preventing the spread of alien invasive species. The project will further strengthen capacities for ecosystem restoration activities through improved networking among key stakeholders, awareness campaigns, institutional cooperation and training. There will be improved coordination of local and overseas NGOs; animal and weed control/management initiatives, and between the government, the University, and the Mauritian Sugar Industry Research Initiative. Local communities will have played an active part in restoration efforts. Training will be imparted on the application of weeding methods and other restoration methodologies. (GEF: \$150,000, non-GEF: \$150,000)
4. **The project will be a replicable model of a cost-effective, sustainable approach for restoration of island forest ecosystems threatened by invasive species.** The project will produce a technical manual that will be widely distributed on the application of best practices to conserve and restore island forest ecosystems from alien invasive species. (GEF: \$50,000, non-GEF: \$50,000)

At the end of this project, there will be a minimum threshold of capacities to conserve critical endemic species within native forests of Mauritius from alien invasive species in a demonstration area within the Black River Gorges National Park. The project will have also ensured sustainability of conservation and control methods for the project site. It is envisioned that this second phase project could be followed by a second-third and final phase project to replicate the conservation and restoration model for native forests, as well as to further implement sustainable alternative livelihood options.

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both controls and prevents the spread of alien invasive species. The project will also identify means by which these options may be realized.

Improved, public awareness, environmental education, networking and training

The project will develop a public awareness campaign and improve educational curricula on the issue of alien invasive species in order to increase the value of preventing their spread and building support to participate in restoration and conservation activities. Training will be provided to build up the technical capacity in Mauritius, targeted to agencies responsible for managing this area. This could include course material for undergraduate course modules, supervision of student projects and a specially designed biodiversity field course for university students and employees of NPCS, NGOs active in conservation. The project will also strengthen linkages between different actors and stakeholders, such as the National Parks and Conservation Service, Mauritian Wildlife Foundation, University of Mauritius, among others, to work as partners in developing and applying conservation and restoration activities.

Replicable model of a cost-effective, sustainable approach for restoration of island forest ecosystems threatened by invasive species

The project will synthesize and assess best practices identified to control alien invasive species, particularly on their applicability to island forest ecosystems. The methodologies and practices that were applied under this project will be outlined in a programming guidebook for use by other project developers and managers. This exercise will result in the development of a lessons learned manual on the application of best practices and options to control alien invasive species in island forest ecosystems.

12. STAKEHOLDERS INVOLVED IN PROJECT:

Government agencies, NGOs, local communities, private sector, academia and research institutions.

Agencies and organizations include:

National Parks and Conservation Service, Ministry of Agriculture

Ministry of Economic Planning and Development

Mauritian Wildlife Foundation

University of Mauritius

Jersey Wildlife Preservation Trust

Mauritius Sugar Industry Research Institute

Other NGOs

Bioculture Ltd

Conservatoire Botanique National de Mascarin

International Institute of Biological Control

Royal Botanic Gardens, Kew

13. INFORMATION ON PROJECT PROPOSER:

The Mauritian Wildlife Foundation (MWF), formerly known as the Mauritian Wildlife Appeal Fund, is the only NGO in Mauritius to be exclusively concerned with the conservation of endemic species. Established in 1984 as a registered charity, the MWF works in close cooperation with the government with whom a memorandum of understanding was signed in 1994. Its goals are to conserve and manage the indigenous flora and fauna of Mauritius and its territories, to raise and supply funds for conservation projects undertaken by MWF and its associates, to coordinate and administer such projects, and to inform, educate, and involve the Mauritian people in conservation efforts.

Implementation arrangements

This project would be implemented by the Mauritian Wildlife Foundation, building upon their experience and capacity developed in the pilot phase. The Ministry of Agriculture and Natural Resources will identify a National Project Director from within its National Parks and Conservation Service. The project will establish a project steering committee with key representatives from all sectors. UNDP will play a key role in participating as an observer in its regular meetings (at least once a month), and facilitate coordination and communication between key parties. Building upon the lessons learned from the pilot phase project, this project must have a full-time project manager in order to ensure full and appropriate coordination among parties. The project steering committee may establish a technical advisory committee in order to focus on technical matters, leaving the steering committee to focus on overall project management issues and policy. The project will be implemented in such a way that these arrangements find a permanent home within existing institutions, which are as a result of the project strengthened to maintain these sustainably. Further details will be developed as part of the preparation of the project brief.

14. INFORMATION ON PROPOSED EXECUTING AGENCY (IF DIFFERENT FROM ABOVE):

The National Parks and Conservation Service was established by the Government of Mauritius following passage of the National Parks Act in 1994.

15. ESTIMATED BUDGET (IN US\$ OR LOCAL CURRENCY):

GEF:	550,000
CO-FINANCING:	550,000
TOTAL:	1,100,000