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PERFORMANCE ASSESSMENT REPORT

SEYCHELLES

**ENVIRONMENT AND TRANSPORT PROJECT
(LOAN 3551-SEY)**

AND

**BIODIVERSITY CONSERVATION AND
MARINE POLLUTION ABATEMENT PROJECT
(GEF GRANT No. 28627-SEY)**

AND

**DUTCH TRUST FUND FOR SUSTAINED CONSERVATION IN SEYCHELLES
(GET GRANT No. 05-26345-SEY)**

March 27, 2002

*Operations Evaluation Department
Sector and Thematic Evaluation Group*

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Currency Equivalents (annual averages)

Currency Unit = Seychelles Rupees (SR)

Appraisal (1992) US\$1 = SR 5.0

At Completion (2000) US\$1 = SR 8.0

Abbreviations and Acronyms

CIDA	Canadian International Development Agency
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DANIDA	Danish International Development Agency
DFID	Department for International Development (UK)
DTF	Dutch Trust Fund
EMPS	Environmental Management Plan for Seychelles
GEF	Global Environment Facility
ICB	International Competitive Bidding
ICR	Implementation Completion Report
IMO	International Maritime Organization
NGO	Non-governmental Organization
LTMP	Long-term Management Plan for Aldabra Atoll
MARPOL	International Convention for the Prevention of Pollution from Ships
ODA	Overseas Development Administration (now DFID)
PAR	Performance Assessment Report
PUC	Public Utilities Commission
SIF	Seychelles Island Foundation
STAR	Société de Traitement et d'Assainissement Régionale
TOR	Terms of Reference
UNDP	United Nations Development Program

Fiscal Year

Government: January 1 – December 31

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March 27, 2002

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

SUBJECT: Performance Assessment Report on Seychelles Environment And Transport Project (Loan 3551-SEY), Biodiversity Conservation And Marine Pollution Abatement Project (GEF Grant No. 28627-SEY) and Dutch Trust Fund for Sustained Conservation in Seychelles (GET Grant No. 05-26345-SEY)

The Seychelles Environment and Transport Project Loan for US\$4.5 million was approved in 1992. Subsequently, the Biodiversity Conservation and Marine Pollution Abatement Project, a sub-component of the Loan, was approved for a GEF Grant of US\$1.8 million in 1993. The grant and loan were fully disbursed. The grant closed in December 1997 after a one-year extension, while the loan closed in December 1999 after an 18-month extension. In addition, US\$0.5 million equivalent from a separate GET Dutch Trust Fund, *Sustained Conservation in Seychelles*, was administered by the Bank under the loan from 1994 to its closure in 1997, when US\$80,000 was canceled.

The overall objective was to improve selected infrastructure for sustained growth of tourism while preserving or restoring environmentally-sensitive areas within the framework of the Environmental Management Plan for Seychelles of 1991 (EMPS). This development objective was highly relevant as the well-being of Seychelles' environment is key to tourism which fundamental to the economy's prosperity. The diverse array of environmental components dove-tailed into differing aspects of the EMPS and included provision under the Loan for a Praslin Island water supply, an institutional study of the Division of Environment, a national marine resources plan, and a water resources management plan for the Outer Islands. This was supplemented by the GEF grant, which focused on national protection of sea turtles, marine pollution abatement, and biodiversity conservation of the World Heritage Aldabra Atoll – the Indian Ocean's Galapagos. The transport objective covered new roads and airport improvements on Praslin Island and road safety improvements on Mahé. The Dutch Trust Fund was designed to support recurrent costs of environmental conservation programs.

The outcome of the IBRD loan is unsatisfactory given that the primary objective was to assist Seychelles towards sustainable environmental management. While the secondary objective to sustain growth of tourism through infrastructure development was substantially achieved, there was little progress on the two primary environmental objectives – institutional reform and strengthening of environmental management, and development a sustainable marine resource management plan – and these were dropped midway through the project. The outcome of the GEF biodiversity conservation component is rated as moderately unsatisfactory: the notable success in facilitating the banning of trade in sea turtles is offset by negligible impact on policies for and management of marine pollution. Seychelles, as a signatory, is still not in compliance with the International Convention for the Prevention of Pollution from Ships. And while support for the World Heritage Site at Aldabra Atoll provided expatriate technical assistance which led to improved infrastructure and better management, negligible long-term Seychellois capacity for enhanced environmental conservation and management was created. The Dutch Trust Fund successfully achieved only one of its four objectives and its outcome is rated unsatisfactory.

In consequence of the above, institutional development resulting from the IBRD loan and the GEF grant are rated as modest. Sustainability, however, is rated likely for both because of high line agency and NGO commitment, and substantial international interest. Institutional development under the Dutch Trust Fund is rated modest and its sustainability is rated non-evaluable.

Bank performance is rated unsatisfactory for the IBRD loan, GEF grant and Dutch Trust Fund. The Bank failed to see that the over-ambitious scale of the government's Environmental Management Plan of Seychelles (EMPS) compared with local capacity and budget was a clear signal that implementation would be a major problem. Also the high per capita GNP cloaked significant economic and institutional weaknesses that should have been probed during appraisal. However, instead of working with government and development partners to develop a less ambitious, better phased and more manageable plan, and give greater attention to building local capacity, the Bank selected portions of the EMPS and tried to submerge its identity within the partnership of donors assisting Seychelles. This did not work and the Bank had great difficulty in supervising components over which it had little control, not least because of high travel costs and difficult access, government intransigence over policy issues, and high Bank staff turnover. Compounding these problems, the Bank over-extended its supervision to supporting the Dutch Trust Fund where it did not have a comparative advantage. However, the Bank has learned from these experiences. The Bank's present involvement in two ongoing GEF grants for Avian Ecosystem Conservation and Marine Ecosystems, and an IDF grant for the second Environment Management Plan, include extensive NGO participation and the Bank's recent advocacy for greater public participation, is highly appreciated within the Seychelles' environmental community.

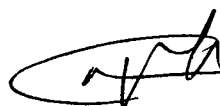
Borrower performance was satisfactory on the GEF Grant, but unsatisfactory for the IBRD loan and Dutch Trust Fund. The Bank's willingness to lend for infrastructure development and environment was a strong endorsement of government policy and gave positive signals to other development partners. However, once these other partners offered finance on easier terms (or grants), some of the Bank-supported components were canceled and most of the policy and institutional strengthening activities – the Bank's *raison d'être* – were either sidelined or put on the slow track. While better governance and transparency on utility financing and regulation was modestly improved, public participation in environmental matters was notable by its absence, and government is only slowly reforming.

There are several findings:

- Instrument choice is key to success. On remote but relatively rich island sites, particularly when the private sector is willing to invest, complex projects are difficult to supervise and it would be simpler to provide a sectoral adjustment loan to catalyze achievement of policy and institutional objectives for public utilities and the environment.
- Sustainable environmental management depends more on building and enhancing institutional and human capital than repairing the results of degradation. In small island communities with constrained resources, the priority is to enhance local capacity through training and establishing links with local and international environmental management organizations. Ecotourism has a major role to play and government should be encouraged to divest managerial responsibility to NGOs and the private sector.
- Sustainable management of remote World Heritage Sites is a major issue. The Bank should give more attention to long-term and sustainable management linked to global environmental institutions and the broader regulatory regime (in this case including better marine pollution prevention and anti-poaching measures).

An unanswered question remains: how should World Heritage Sites be managed when the costs of doing so are beyond local capacity?

Attachment



About this Report

The Operations Evaluation Department assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the Bank's self-evaluation process and to verify that the Bank's work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, OED annually assesses about 25 percent of the Bank's lending operations. Assessments are conducted one to seven years after a project has closed. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming country evaluations; those for which Executive Directors or Bank management have requested assessments; those that are likely to generate important lessons, and those in under-assessed countries. The projects, topics, and analytical approaches selected for assessment support larger evaluation studies.

A Project Performance Assessment Report (PPAR) is based on a review of the Implementation Completion Report (a self-evaluation by the responsible Bank department) and fieldwork conducted by OED. To prepare PPARs, OED staff examine project files and other documents, interview operational staff, and in most cases visit the borrowing country for onsite discussions with project staff and beneficiaries. The PPAR thereby seeks to validate and augment the information provided in the ICR, as well as examine issues of special interest to broader OED studies.

Each PPAR is subject to a peer review process and OED management approval. Once cleared internally, the PPAR is reviewed by the responsible Bank department and amended as necessary. The completed PPAR is then sent to the borrower for review; the borrowers' comments are incorporated into the document that is sent to the Bank's Board. When an assessment report is released to the Board, it is also widely distributed within the Bank and to concerned authorities in member countries.

About the OED Rating System

The time-tested evaluation methods used by OED are suited to the broad range of the World Bank's work. The methods offer both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. OED evaluators all apply the same basic method to arrive at their project ratings. Following is the definition and rating scale used for each evaluation criterion (complete definitions and descriptions of factors considered are available on the OED website: <http://wbln1023.worldbank.org/oed/oeddoclib.nsf/232d43ae09e87ac985256966007cc257/acaeb95358e99e578525698c005190da?OpenDocument>).

Relevance of Objectives: The extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). *Possible ratings:* High, Substantial, Modest, Negligible.

Efficacy: The extent to which the project's objectives were achieved, or expected to be achieved, taking into account their relative importance. *Possible ratings:* High, Substantial, Modest, Negligible.

Efficiency: The extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared to alternatives. *Possible ratings:* High, Substantial, Modest, Negligible.

Sustainability: The resilience to risk of net benefits flows over time. *Possible ratings:* Highly Likely, Likely, Unlikely, Highly Unlikely, Not Evaluable.

Institutional Development Impact: The extent to which a project improves the ability of a country or region to make more efficient, equitable and sustainable use of its human, financial, and natural resources through: (a) better definition, stability, transparency, enforceability, and predictability of institutional arrangements and/or (b) better alignment of the mission and capacity of an organization with its mandate, which derives from these institutional arrangements. Institutional Development Impact includes both intended and unintended effects of a project. *Possible ratings:* High, Substantial, Modest, Negligible.

Outcome: The extent to which the project's major relevant objectives were achieved, or are expected to be achieved, efficiently. *Possible ratings:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Bank Performance: The extent to which services provided by the Bank ensured quality at entry and supported implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of the project). *Possible ratings:* Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.

Borrower Performance: The extent to which the borrower assumed ownership and responsibility to ensure quality of preparation and implementation, and complied with covenants and agreements, towards the achievement of development objectives and sustainability. *Possible ratings:* Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.

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This report was prepared by Mr. George Keith Pitman (Task Manager) who assessed the projects in March 2001. Mr. William Hurlbut edited the report. Ms. Soon-Won Pak provided administrative support.

Principal Ratings:

SEYCHELLES ENVIRONMENT AND TRANSPORT PROJECT (LOAN 3551, TF26345)

	<i>ICR</i>	<i>ES</i>	<i>Assessment</i>
Outcome	Satisfactory	Moderately Unsatisfactory	Unsatisfactory
Sustainability	Likely	Likely	Likely
Institutional Development	Substantial	Modest	Modest
Borrower Performance	Satisfactory	Satisfactory	Unsatisfactory
Bank Performance	Satisfactory	Satisfactory	Unsatisfactory

SEYCHELLES BIODIVERSITY CONSERVATION AND MARINE POLLUTION ABATEMENT PROJECT (GEF GRANT NO. 28627 SEY)

	<i>ICR</i>	<i>ES</i>	<i>Assessment</i>
Outcome	Highly satisfactory	Satisfactory	Moderately Unsatisfactory
Sustainability	Likely	Likely	Likely
Institutional Development	Partial	Modest	Modest
Borrower Performance	Highly satisfactory	Satisfactory	Satisfactory
Bank Performance	Highly satisfactory	Satisfactory	Unsatisfactory

SEYCHELLES DUTCH TRUST FUND FOR SUSTAINED CONSERVATION IN SEYCHELLES (GRANT NO. 05-26345 SEY)

	<i>ICR¹</i>	<i>ES</i>	<i>Assessment</i>
Outcome	Unsatisfactory	-	Unsatisfactory
Sustainability	Unlikely	-	Non-evaluable
Institutional Development	Negligible	-	Negligible
Borrower Performance	Unsatisfactory	-	Unsatisfactory
Bank Performance	Unsatisfactory	-	Unsatisfactory

1. A draft ICR was prepared by the Africa Water and Urban Division in March 1998. There is no record of its submission to either the Board of the Directors or to Operations Evaluation Department.

Preface

The Seychelles Environment and Transport Project supported by Loan 3551-SEY for US\$4.5 million was approved in 1992. Subsequently, the Biodiversity Conservation and Marine Pollution Abatement Project, a sub-component of the loan, was approved for a GEF Grant (28627-SEY) for US\$1.8 million in 1993. The grant and loan were fully disbursed. The grant closed in December 1997 after a one-year extension, while the loan closed in December 1999 after an 18 month extension. In addition, US\$0.5 million equivalent from a separate Dutch Trust Fund, *Sustained Conservation in Seychelles* (Grant 05-26345-SEY) was administered by the Bank under the loan from 1994 to its closure in 1997, when US\$80,000 was canceled.

The PAR presents the findings of a mission by the Operations Evaluation Department (OED) that visited Seychelles in March 2001. The findings are based on a review of the Staff Appraisal Report, the Global Environmental Facility Project Document, and project files. This was supplemented by the field visit to the project, and discussion with officials of the Seychelles' government, respective government departments, officials and staff concerned with environment, Seychelles' Coastguard, Victoria Port Authority, the Islands Development Company Ltd. and meetings with other private sector managers and beneficiaries. The Seychelles Island Foundation (which arranged logistical support) and Birdlife International (Seychelles) provided valuable insight. The author would particularly like to acknowledge the courtesy, facilitation, and efficiency of the director and staff of the Department of International Economic Affairs, Ministry of Foreign Affairs, and the manager/warden of Aldabra Atoll.

There are several reasons why these projects were assessed. The GEF component was one of the first GEF grants and was subsequently designated a "best practice" for the Bank's Africa Region. The bundling of the GEF grant with an IBRD loan was innovative but proved to be problematic. Thus, the assessment was designed to enabled evaluation of the effectiveness of, and draw lessons from, GEF and Bank assistance in building capacity for natural resource management of remote and/or small country World Heritage Sites. Additionally, the assessment contributes to OED's in-process study of global public goods and it was cost-effective to look at both projects together.

Following standard OED procedures, the draft PAR was sent to the borrower and cofinancier for comments before being finalized. No comments were received.

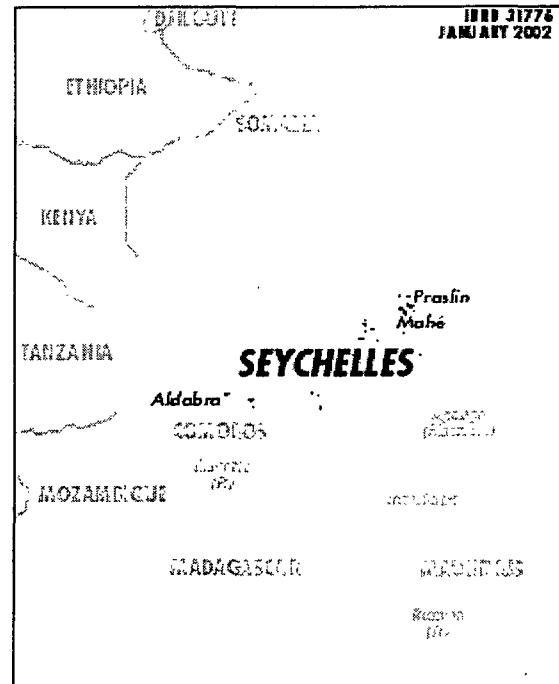
1. Background

1.1 Located in the western Indian Ocean, Seychelles is an archipelago of some 115 islands spread over 1.4 million square kilometers of ocean (Figure 1). The islands' unique ecology and pristine environment provides the basis for tourism and fisheries, which are the mainstay of the economy. The islands contain two World Heritage Sites – the Vallée de Mer on La Digue Island located near Mahé, and Aldabra Atoll located 1,150 kilometers to the southwest and closer to the Comoros Islands and Madagascar. Aldabra, whose conservation was a major project objective, is regarded as the Galápagos of the Indian Ocean because of its unique biodiversity, which includes the world's largest population of giant land tortoise.¹ It is also the world's largest unspoilt coral atoll.

1.2 As an upper middle income country, Seychelles has experienced reasonably equitable economic growth and significant progress in social conditions.² Since the early 1990s, the government implemented economic reforms, reducing controls and increasing economic liberalization. In both areas, gradual and limited progress has been made, although the economic outlook worsened in the late 1990s when the external current account deficit averaged 15 percent of GDP, depleting foreign exchange reserves. Given its relative wealth, however, some Executive Directors questioned the basis for the IBRD loan as the GNP per capita was 15 percent above the graduation benchmark. In response, the Bank argued that its support and advice was needed because the minuscule economy, hindered by limited resources and with a heavy dependence on a volatile tourism market, remained fragile in an uncertain global environment.

1.3 Past accomplishments in environmental management were significant. A series of national parks and reserves was established in 1971 and cover 42 percent of the land area and 27,000 hectares of surrounding seas and reefs. Seychelles secured an agreement from the International Whaling Commission for an Indian Ocean Sanctuary for whales and in launching the proposal for what is now for the UNDP Convention for the Protection, Management, and Development of the Marine and Coastal Environment of the East Africa Region. Significantly, Seychelles was among the first countries in the Africa Region wishing to implement the International Convention for the Prevention of Pollution from Ships, known as the MARPOL treaty, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora, known as CITES.³ In line with these concerns, Seychelles' government integrated

Figure 1: The Seychelles Archipelago



1. There were an estimated 130,000 endemic giant turtles (*Geochelone gigantean* Schweigger) in 1973-74. Concern was first raised in 1874 when Darwin, Hooker, Owen, Newton and Günther petitioned the Governor of Mauritius and Seychelles for their preservation

2. GNP per capita was \$5,070 in 1990, increasing to \$6,500 in 1999.

3. The MARPOL 73/78 Convention was facilitated by the International Maritime Organization (IMO), an agency of the United Nations. The convention, adopted in 1973 and amended by a Protocol of 1978, is aimed at preventing vessels of

environmental and resource management issues into its 1990-94 development plan. Evolving from the national development plan, the government's more detailed Environmental Management Plan for the Seychelles (EMPS) was endorsed by a 1991 international donor community meeting in Paris.

1.4 The main thrust of the Environmental Management Plan of Seychelles was that environment is at the core of the economy's well-being and prosperity and it identified five goals for sustainable development (Box 1). It recognized the need to protect biodiversity from threats posed by concentrations of populations and economic activities, beach erosion, and inadequate management of water resources, sewage and other wastes. The plan emphasized the importance of regional environmental cooperation, particularly to guard against over-fishing, and the need to develop baseline studies and scientific information on marine and coastal ecosystems. Finally, the plan proposed developing national preparedness and capacity to address oil spills as part of the development of Port Victoria. Most of the donors supporting the plan, including the Bank, were concerned that the investment program was over-ambitious in scope, costly, and maybe exceeded local institutional capacity. In consequence, after a joint prioritizing exercise with government, the Bank agreed to support 7 from a list of 52 EMPS projects. The rationale was to balance environmental objectives with provision of infrastructure that would meet equity and economic development objectives and help the country on its path to environmentally sustainable and equitable development. The Bank also strongly supported application for a GEF grant as it would send a signal to the countries of the Africa Region that the international community would reward initiatives for good environmental management. By appraisal, pledges totaling US\$27.3 million were secured from bilateral donors, NGOs, and multilateral agencies, including the two projects under assessment, but only about \$4.8 million was actually committed – most of this from the Bank and GEF.⁴

**Box 1: The Goals of Seychelles' 1991
Environmental Management Plan**

1. To protect the health and quality of life for all Seychellois
2. To ensure that future economic development proceeds on an equitable and sustainable basis
3. To preserve natural heritage and biological diversity
4. To improve decision-making, laws, and the institutional framework for sustainable development
5. To increase public information and understanding of the essential linkages between environment and development

Project Design

1.5 The Bank supported the EMPS through three complementary projects governed by three common objectives:

- Assist with implementation of the Environmental Management Plan of Seychelles;
- Support environmental programs in resource management, biodiversity conservation, and marine pollution control; and
- Improve the basis of sustained tourism growth by facilitating tourist access, while preserving or restoring environmentally sensitive areas.

all kinds from discharging at sea wastes that are considered to be pollutants. In consequence, ports of call must be able to receive wastes and dispose of them in an environmentally sound manner.

4. The EMPS consisted of 52 projects and 10 programs supported as follows: coastal zone management (EC), information, training and monitoring (UNDP), environmental assessment guidelines (France), offshore drilling program (CFTC), waste management (AfDB), coastal zone management, biodiversity and institutional support (Netherlands).

1.6 Initially, the centerpiece of the project was to be a large EMPS water supply project for Mahé island – the construction of the Grande Anse Dam and associated supply network. Extensive cofinancing was initially agreed given its high cost (about \$70 million), and a draft letter of sector policy covering water supply, sanitation, and solid wastes was agreed during pre-appraisal – although the Bank’s requirement of full cost recovery met considerable opposition from government. Major political changes in 1992 caused postponement of appraisal during which time Bank management reached the view that it was an oversized project that could have adverse consequences for the country’s creditworthiness – as the Bank’s Regional Director noted, “we cannot go ahead with projects that sink countries.” In consequence, the infrastructure component was substantially downsized to exclude the Mahé water supply and focus attention on the financial performance of the Public Utilities Commission (PUC), civil works on Praslin Island, an underdeveloped tourist resort some 30 kilometers to the northeast of the capital, and road improvements on Mahé.

1.7 In consequence, the project was repackaged into an IBRD Loan and a GEF Grant which became effective in early 1993. And in mid-1994, the Bank took on the administration of the Dutch Trust Fund for Sustained Conservation in Seychelles. The eleven major components are detailed in Box 2.

Box 2: Project Components within the EMPS Framework

Funding	Subsector	Component	Implementation Responsibility
IBRD	Environment	Praslin Water Supply II and Institutional Strengthening of the Public Utilities Corporation	Public Utilities Corporation
	Environment	Water Resources Study and Management Plans for Outer Islands (dropped 1996)	Ministry of Environment, Economic Planning and External Relations
	Environment	Marine Resources Management Plans (dropped 1996)	Seychelles Fishing Authority
	Environment	Baie Lazare Water Supply (added 1996)	Public Utilities Corporation
	Transport	Praslin Road Improvement	Land Transport Division
	Transport	Praslin Airport Improvement	Civil Aviation Authority
	Transport	Road Traffic Safety Program for Mahé	Land Transport Division
GEF	Environment	Organizational Study of the Division of the Environment	Director-General of Environment
	Environment	Biodiversity Conservation	
		<ul style="list-style-type: none"> • Restoration and Conservation of Aldabra Ecosystem • Protection of Sea Turtles 	Seychelles Island Foundation Conservation and National Parks
	Marine Pollution Abatement	Ports and Marine Services Division	
Dutch TF	Environment	Sustained Conservation in Seychelles <ul style="list-style-type: none"> • Preservation and maintenance of unique ecosystems • Preservation of biodiversity • Financing of recurrent costs of above • Training, environmental education and people’s participation 	Ministry of Foreign Affairs, Planning and Environment

2. Implementation

Overview

2.1 The Bank made a policy decision not to differentiate its components within the EMPS international partnership. Instead, it made government's appointment of an EMPS National Coordinator from the Ministry of Environment, Economic Planning, and External Relations a condition of effectiveness for both the loan and GEF grant. And it was expected that the National Coordinator would delegate management of individual components according to agencies' comparative advantage. Although the post of National Coordinator was established, five incumbents filled the position during 1992-99. And, not unexpectedly, the large number of agencies responsible for the individual components (Box 2) made implementation very complex and coordination became a major problem.

2.2 Insufficient local managerial and technical capacity also hindered implementation. Mostly this was due to the small national population (70,000), scarcity of skilled professionals, and a dependence on contract expatriates for specialist skills. This problem was foreseen at appraisal and worsened by the large number of donor-funded projects in the EMPS – 11 were under commission at the time of appraisal and another 19 were in the pipeline. Optimistically, it was thought at appraisal that government's Human Resources Development Plan for 1992-96 would address the overall shortage of skilled and professional staff and that the loan's Organizational Study of the Division of Environment was adequate to address comprehensive staffing and training plans needed to implement the EMPS. However, this component was not implemented– although environmental management and staffing subsequently benefited from government initiatives independent of Bank efforts.

2.3 The relatively low status of the National Coordinator in the administration and an overload of tasks meant that it was difficult to get results. This job was made onerous by unfamiliarity with Bank supervision requirements and procurement procedures. As a result, and because of the sensitivity of making foreign exchange commitments, even minor procurement was routinely passed on for Bank review and clearance. This propensity, allied with difficult communications, an *ad hoc* chain of command, and four changes of Bank task manager led to delays in making decisions. Toward the end of the loan, project management markedly improved as the Coordinator became more experienced and the effects of reorganization of the Ministry of Environment, Economic Planning, and External Relations started to show results. However, the earlier problems required GEF grant agreement extension by a year to December 1997 and the loan by 30 months to December 1999.

The IBRD Environment and Transport Project

Water and Marine Resources Management Studies Were Dropped

2.4 Appraisal failed to detect government's reluctance to use a loan for these environmental components. The formulation of comprehensive management plans for fisheries and marine resources management was a centerpiece of the Bank's support for the EMPS given the national importance of sound marine management for tourism and commercial fisheries. The intent of the plan was to determine priorities and recommend changes over the period 1993-95 for more efficient utilization of marine resources and fish management in three geographic provinces (coastal zones; plateau and reef slopes; and oceanic resources). A year after effectiveness, this component ran into trouble because the Seychelles Fishing Authority, citing lack of budget,

wanted to redraft the terms of reference (TOR) for the studies. At mid-term review the whole marine resources management exercise was cancelled because the Bank belatedly realized that: “soon after signing the Bank Loan, government received grant funding from ODA for a ‘Multipurpose Fisheries Management Plan.’ Many of the objectives foreseen by the World Bank will be met by this study.”⁵ In retrospect, the Bank’s optimism was not justified as the ODA grant was cancelled. While four EMPS components did cover marine resources management and plans were developed as part of a Regional Project of the Indian Ocean Commission, implementation remains partial and erratic due to limited human and financial resources, lack of integration and partnership among concerned agencies.⁶

2.5 The component to formulate comprehensive water resources policy, guidelines and management for seven of the outer islands was to have underpinned government plans for their development, water being the constraining resource.⁷ It was only as the TOR and ICB packages were being developed it became clear that there was very little demand for the outputs of this high-cost exercise. Cognizant of this and government incentives to promote private sector development of luxurious island resorts - where the developer provides water supplies – this component was dropped in early 1996. The \$0.88 million freed by this decision plus \$0.63 million from cancellation of the marine resources study was reallocated to finance the Baie Lazare Water Supply (described in para 2.7.)

Modest Infrastructure Improvements and Some Institutional Reform

2.6 **Water Supply.** Water supply improvements partially redressed inequity in Praslin and southwest Mahé islands and contributed to continued growth of tourism. Nationally, the loan assisted government to increase access to and quantity of treated water supplies. The number of household domestic water connections increased from 13,131 to 18,774 between 1996-2000 and commercial connections almost doubled. As a result, the national target of 95 percent coverage of domestic supplies was achieved in 2000. In Praslin island, however, given greater growth in demand than expected, in 2000 only 80 percent of the population received treated water – and this despite apparently extraordinarily low levels of unaccounted water (about 16 percent in 2000) that were better than appraisal targets (18 percent).⁸ On Mahé, the situation is deteriorating, and unaccounted water has increased by 10 percent since appraisal to 38 percent in 2000.

2.7 In Praslin, the project increased the supply by 36 percent through construction of low-level river intakes and constructed pumping stations to connect the new supply to existing break pressure and sedimentation tanks.⁹ In 1997, government on-lent \$1.3 million of savings from dropped project components (see paras 2.5) to the PUC to increase water supplies threefold and improve reliability and coverage in southern Mahé – an adroit move that partly made up for the cancellation of the Grande Anse Dam.¹⁰ Works included improved river diversion works, boreholes, three storage tanks, pumps, and a distribution network at Baie Lazare. Overall, the

5. World Bank mid-term review. November 1994.

6 Government of Seychelles. 2000. EMPS 2000-2010. Fisheries and Marine Resources/Processes Progress since 1990 and prospects to 2010 are evaluated pp 89-94.

7. The islands were: Assomption, Astove, Coetivy, Desroches, Farquhar, and Providence.

8. The low percentage for unaccounted water may be a result of faulty metering – monthly records frequently show that consumption exceeds supply, sometimes by as much as 44 percent (e.g., December 1999).

9. Praslin has two independent systems. The N and NW coastal zones were supplied from the Fond B’Offay river, the S and SE coasts from the Nouvelle Découverte river. The project increased the yield from the Fond B’Offay by 39 percent (from 536 to 746 m³/day) and that from the Nouvelle Découverte by 32 percent (from 380 to 500 m³/day).

10. On-lending was at 8 percent for 15 years.

water supply's civil works were well implemented with few problems and required minimal supervision from the Bank. The only significant issue was difficulty in obtaining Bank approval to use loan funds for PUC force-account work, which is contrary to Bank procurement policy.¹¹ The investment provided improved water supplies to 740 households and a five-star luxury 200-room hotel – and given the high consumption at the hotel, most benefits were to the private sector.

2.8 A major objective of the loan, to increase the financial viability of the water utility function of the PUC, was only partially achieved. An increasing block water tariff was successfully introduced (bill collection ratio exceeds 95 percent), and an inventory of fixed assets was completed. Yet the PUC was unable to provide this assessment with a financial breakdown for its water operations because water and electricity costs and revenues are still lumped together – a problem experienced (along with qualified financial audits) but not overcome during supervision. Overall, however, the whole PUC operation returned a modest 3 percent profit on assets and sales in 1999.¹²

2.9 **Transport.** Road building in Praslin was completed but with considerable problems. The Bank's insistence on international competitive bidding (ICB) procurement procedures – rather than local competitive bidding – was inappropriate given the isolation of Seychelles, and only served to increase already high transaction costs. Inadequate appraisal meant that bids submitted were twice the appraisal estimate - and roads were redesigned to a lower standard. Together with poor cross-drainage, this created maintenance problems exacerbated by poor construction management and higher than anticipated traffic loading.¹³ And because of the way the civil works contract was written, much of the remedial work was at government's expense – highlighting the importance of addressing capacity constraints in Bank-funded projects. Fortunately, upgrading Praslin airport's terminal and generating a surplus of income over airport operating costs was achieved – even though funds allocated for runway resurfacing had to be used for rehabilitation of the defective highway. The road traffic safety program for Mahé successfully focused on some institutional strengthening, and made significant road improvements at Cascade, a critical accident-prone section of the east coast road connecting the airport to the capital. While traffic accidents have reduced at Cascade, it is unclear how much of this is due to the project's intervention: a new bypass dual carriageway connecting the airport to Victoria – unforeseen during appraisal – has been constructed on fill some 100 meters offshore. Traffic volume on the Cascade road has fallen by 60 to 70 percent but the safety improvement has been offset slightly by higher traffic speeds.

Biodiversity Conservation and Marine Pollution Abatement Project (GEF)

There Was Limited Progress Toward Marine Pollution Prevention

2.10 The objective was to address the procedures and design of facilities at Port Victoria to receive ships' wastes as required by the MARPOL Convention, and dispose of them in an environmentally sound manner. More importantly, the study was to ensure that its recommendations was consistent with island-wide approaches for solid waste collection and disposal. The first phase of the study, completed in 1995, analyzed the scope and nature of the

11. The PUC successfully argued that the dearth of small contractors, particularly off Mahé, for specialist water supply works limited competition and were more costly than using the PUC's own labor force.

12. These profits are down from the peak of 13 percent on sales and 6 percent on assets in 1996 because of recent commercial borrowing.

13. Heavy plants used the road for new hotel construction.

port's waste problem and outlined preliminary options for waste reception and treatment facilities taking into account the recommendation of an independent EMPS Solid Waste Management Planning study commissioned by government. The GEF funded study raised a number of issues, the most important being that the government's *ad hoc* approach to planning waste disposal was sub-optimal, especially as part of ships' waste was biologically and environmentally hazardous and required incineration to render it safe. In addition and contrary to a holistic approach to marine pollution management, the collection of sewage from ships was omitted from the second phase study because it was not a mandatory MARPOL requirement and existing sewage treatment capacity for Victoria was (then) inadequate and could not cope with the additional load.

2.11 The recommendations of the second phase was that ships' wastes (primarily oily sludge and garbage) should be integrated with hospital and airport waste and incinerated to minimize costs. However, the relatively high investment (\$3.3 million) and annual running costs (\$0.64 million) meant that a decision to build was deferred until grant or other concessional funding became available – and this has not happened to date.

2.12 Compounding the logistical difficulties, the hospital independently commissioned a new incinerator, thus weakening the case for an integrated facility. To partly mitigate this unexpected outcome, project savings were used to provide oil-spill containment equipment and training to manage small spills in Port Victoria harbor. A national oil spill contingency plan is being developed under the National Environmental Management Plan and responsibility for oil-spill emergency management has recently been transferred from the Port Authority to the Coast Guard. Additionally, the State Oil Company has purchased a small amount of equipment to cover its terminal operations.

2.13 Despite the GEF grant, the Seychelles is not in compliance with MARPOL. The Seychelles' ability to cope with marine pollution has improved only marginally, and disposal of ships' wastes is an increasing problem. This is because government is becoming more successful in promoting Port Victoria as a trans-shipment point for East Africa primarily through minimizing harbor fees. Between 1995 and 1999 the number of ships increased by almost a third, and the tonnage of tuna landed for processing increased more than sixfold.¹⁴ Reduced income and an unwillingness to charge for waste collection and disposal means there is still no funding for a unified system to collect ships' wastes, and some – liquid spills and oily bilge waste from fishing vessels – continue to be dumped in the harbor.¹⁵ And this is made worse by a number of artificial islands (constructed under the east coast reclamation project in the late 1990s) that have significantly reduced the natural circulation along the coast thus threatening the adjacent Marne Seychelles Marine Park (3 kilometers offshore Port Victoria.) Clearly, marine environmental management concerns are secondary to promotion of commerce in terms of the revealed preference of Seychelles' authorities.

2.14 Within the greater Seychelles, maritime area navigation aids need improvement to stop pollution caused by accidental grounding, particularly for critical environmental sites such as Aldabra Atoll. Currently, Aldabra's 30 nautical miles navigation beacon is centered midway

14. Heinz opened a tuna processing factory at Port Victoria in the late 1990s and in 1999 this exported 33,200 tons of canned tuna.

15. Government awarded a sole concession to STAR (Société de Traitement et d'Assainissement Régionale) for solid waste collection and processing for Mahé in 1998; this expanded to include Praslin (1999) and La Digue (2000). Waste oil is collected on Mahé only, and extends to on-demand removal from ships but accounting for a very small percentage of all ships. Currently STAR exports oil wastes for incineration on Réunion, and the PUC burns some at its incinerator. Despite this there is a growing stockpile of oil and toxic wastes held at the landfill island just north of the international airport. A number of small private contractors collect solid waste from ships and deposit these at STAR's collection points. Thus, institutional arrangements for management of ships' wastes are still evolving.

between Aldabra Atoll and Assomption Island allowing the busy mega-tanker traffic in the Mozambique Channel to come within about 6 nautical miles of Aldabra's west coast. The government solicited the Bank's influence on the International Maritime Organization (IMO) to increase the limit to 50 nautical miles and move the navigation beacon to ensure greater security of Aldabra's unique aquatic biodiversity – this proposal is under discussion with IMO.

But Protection of Sea Turtles was Assured

2.15 Seychelles hosts one of only five regional populations of Hawksbill turtles.¹⁶ Initially, the sea turtle protection program was aimed at designing measures to maintain the sustainable yield of Green (*Chelonia mydas*) and Hawksbill (*Eretmochelys imbricata*) turtles because CITES allowed continued trading if production activities could ensure recovery of endangered species. However, the government saw that continued trade, especially in Hawksbills, violated the spirit if not the letter of CITES and, in consequence, they abandoned the project's turtle ranching feasibility study. Attention was then successfully focused on programs (legislative measures, publicity campaigns) to control the supply and demand for turtle shells, retrain artisans dependent on the trade, and provide compensation. Spurred by a significant growth in turtle shell stocks – which doubled between 1991 and 1993¹⁷ – government passed legislation to phase-out sale of turtle products by July 1994 and bought-out existing stocks by the end of that year. In all, 21 businesses employing 40 artisans were identified and each artisan was compensated at an average rate of \$15,000 – half provided by the government, half by GEF.

2.16 Disposing of the stockpile of shells proved to be contentious – the Bank's main concern was that the shells would find their way back onto the market and thus undermine attempts to banish the trade. Eventually, long after the artisans were compensated and retrained, the stockpile was finally destroyed at a public burning ceremony as part of the 1998 Miss World Pageant, which was hosted by Seychelles. Thus, from a legislative and political perspective, this component was successful in prohibiting marine turtle exploitation.

2.17 Enforcing the law prohibiting killing of turtles and possession of turtle products has proved difficult, particularly for Green turtles in the outer islands. On Mahé, only a small number (seven) of likely infractions have been brought before the court since 1997 and, even then, the small fines (maximum \$125) are an ineffective deterrent. Fortunately, some villages have assumed monitoring responsibility for their beaches and, with conservation awareness augmented through the school curriculum and activist NGOs, the younger generation no longer see turtles as food and demand for raw meat is declining. A major problem is that most older Seychellois believe that turtles are a regionally shared resource, and thus it is unfair and futile to expect them to protect turtles when they would only be slaughtered in other countries. Recent findings, however – based on the research, monitoring and evaluation enabled by the GEF grant – show that while juvenile turtles roam the Indian Ocean, mature female turtles may return to their natal rookery and remain within Seychelles' waters throughout their adult lives.¹⁸ They are consequently a resource effectively belonging to the Seychellois people – and dissemination of this finding should reinforce conservation efforts.

16 The other populations are in Mexico, Indonesia and two in Australia.

17. It was estimated that 1,700 turtles were being killed each year and that stocks had reached 2.5 tons worth \$250,000. In addition, a large but unknown number of turtles were killed in the outer islands primarily for their meat.

18 Mortimer, Jeanne A. 2001. *Conservation of Hawksbill Turtles (Eretmochelys Imbricata) in the Republic of Seychelles*. ASEAN Review of Biodiversity and Environmental Conservation. July-September 2001.

2.18 This, it is too soon to judge the impact of turtle conservation efforts. Breeding populations were heavily harvested during the period 1960-1990 and little reproduction occurred – as a result the populations declined rapidly. As it takes 25-40 years for turtles to mature, it may be a decade or more before a recovery becomes apparent. However, other experience in the Seychelles is encouraging. Small-scale conservation efforts by Birdlife International on Cousin Island since 1970 resulted in an increase in nesting Hawksbill females from 30 to about 100 by 1994, even when other island populations were declining.¹⁹

Aldabra – An Unfinished Agenda

Objectives and Background

2.19 The rationale for the GEF grant was to restore and protect Aldabra's important global commons and its biodiversity. This was to be achieved through four components: (a) provision of personnel to strengthen SIF research and conservation management; (b) rehabilitation of the research facilities; (c) control of the feral goat population; and (d) preparation of a long-term management plan. A fifth component, added after appraisal, was to monitor and evaluate of the giant tortoise population. These objectives were substantially achieved, but with some shortcomings.

2.20 Aldabra attained its international prominence as an global environmental commons after an attempt by the British Government to bulldoze the island for a strategic airbase was successfully foiled by the scientific community in the 1960s.²⁰ And after independence, the government of Seychelles formed the Seychelles Island Foundation (SIF) in 1979, a self-funded charitable trust charged with conserving and managing Aldabra in perpetuity and the Vallée de Mai Nature Reserve on Praslin Island.²¹ Subsequently, the United Nations proclaimed Aldabra a World Heritage Site in 1982 and Vallée du Mai in 1983.

2.21 The Seychelles Island Foundation is managed by a Board of Trustees appointed by the President of Seychelles and Chaired by the Principal Secretary, Ministry of Environment and Transport. Eight of its 14 members are drawn from the international scientific and conservation community, including the Royal Society of London, Smithsonian Institute, Swedish World Wildlife Fund, World Conservation Union, and University of Berkeley. Five appointees represent the main Seychelles line agencies, and two freelance conservationists represent the international media. Currently, the SIF employs 25 staff, four in the headquarters at Victoria, eight at Vallée du Mai and thirteen at Aldabra. Periodically, the Aldabra contingent is supplemented by short-term volunteers. About 20 percent of annual funding is derived from grants given by the government of Seychelles, the Royal Society, and the Smithsonian Foundation. Entry fees to Vallée de Mai provide the balance of funds, most of these are used to cross-subsidize SIF activities on Aldabra.

19 Mortimer, J. A. & R. Bresson. 1999. *Temporal distribution and periodicity in hawksbill turtles (Eretmochelys imbricata) nesting at Cousin Island, Republic of Seychelles, 1971-1997*. Chelonian Conservation and Biology 3 (2): 318-25. Dept. of Zoology, P.O.Box 118525, Univ. of Florida, Gainesville, FL 32611, USA.

20 Since 1878 the British government had issued licenses to harvest copra, timber, fish, and tortoise from Aldabra, activities which continued almost without break until 1945. After decades of intermittent research, the Royal Society staked its claim in response to the UK's Ministry of Defence proposal in 1962 to level much of the atoll in order to create an Indian Ocean strategic airbase. Eventually, following intense lobbying by the Royal Society, the U.S.A.'s National Academy of Sciences and the Smithsonian Institute, and abandonment of a British military presence east of Suez, the U.K. put its proposal on hold. In the meantime, the research station was built in 1969 to enable more systematic evaluation of the atoll's unique biology. Independence from the U.K. in 1976 finally put an end to the threat.

21. The Vallée de Mai Nature Reserve is renowned, *inter alia*, for the endemic Coco-de-mer (*Lodoicea maldivica*), a palm tree 30-40 tall which is the bearer of the largest seed in the plant kingdom.

Personnel Strengthening of SIF Improved Effectiveness and Conservation Management

2.22 Until the late 1990s, SIF's management of Aldabra was fraught by an inability to recruit and retain suitably qualified staff caused by the atoll's isolation, poor communications, difficult living conditions, and poor management exercised from Mahé. With no scientists present, the SIF mandate of conservation, monitoring, research, and education had been virtually ignored. The GEF project sought improvements on two fronts. First, government and SIF signed a memorandum of understanding (a condition of disbursement) that clearly defined the responsibilities of SIF's management of Aldabra, which included recruitment of scientific and managerial personnel and specialist consultants. Second, the GEF grant allowed recruitment of full-time expatriates because earlier attempts to recruit Seychellois failed to attract applicants.

2.23 **SIF management has improved but there are still major problems.** Until 1998, management of Aldabra was intermittent, and a succession of wardens complained about isolation and lack of support from SIF, feelings exacerbated by unanswered requests for logistical support, *ad hoc* appointment of unqualified support staff, and inadequate coordination and regulation of visitors.²² Expatriate staff proved difficult to find and their recruitment was time-consuming. When they finally arrived in Aldabra, unclear demarcation of research and managerial roles created personnel problems. Turnover of local and expatriate staff was high.

2.24 In response to Bank pressure to improve day-to-day management, the Board of Trustees created the post of Executive Director, SIF, and a small support team in mid-1998, including an Executive Officer. A Science Committee meets bi-monthly to review research and proposals. There is still a long way to go. A Fund-Raising Committee (chaired by an expatriate resident in the U.K.) has been moribund since it was initiated. There are no annual workplans and planning is mostly reactive. There is an annual audit and the first annual budget was prepared only in fiscal year 2001. Judging from the assessment team's experience and interviews, the decision-making, budgeting, and income-generating process is still *ad hoc* and not very transparent. Public accountability is notable by its absence and local environmental NGO's attempts to become part of the decision-making process have been rebuffed.²³

2.25 **Management of Aldabra has improved.** Expertise and reforms introduced by the GEF-sponsored wardens and research officers and partial implementation of the GEF-sponsored management plan led to marked improvements in management. Emphasizing the importance of leadership, SIF's placement of an unqualified warden plunged atoll management back to chaos after GEF-funding ceased. Fortunately, a new and dynamic Seychellois warden (ex-military) took over in January 2001 and management of the atoll has gained a new equilibrium and respect with the expatriate researchers. Under the new warden's leadership, many of the earlier abuses have been curtailed, a program of environmental cleanup of the settlement area is almost complete, and a new pro-green program to improve energy and waste management has been proposed.

2.26 **Biodiversity conservation and monitoring was rejuvenated.** A series of standards and a systematic framework for ecological monitoring and conservation were developed and formalized in the 1996 Operations Manual, which is closely followed by staff and researchers.²⁴

22. Aldabra Atoll Annual Report 1998, Michael Betts, Warden/Research Officer.

23. Several local NGOs – most notably the highly experienced and respected Birdlife Seychelles – have sought representation on the Board of Trustees. The board meeting of December 2000 (held on Aldabra) stated that as newly elected members still have three years to run and the board contains one overseas member in excess of the legal complement, that consideration of additional members or wider constituency should be “put on hold for the time being.”

24. Pierce, Susan and David Augeri. 1996. *Aldabra: Management and Operations Plan, Science and Conservation Plan and Operations Manual*. Unpublished draft.

There is now an active and responsible conservation staff comprising the Research Officer and two Rangers. Unlike earlier times, the younger Seychellois staff are undertaking sequential postings to Aldabra and are building knowledge and conservation skills, mostly trained and mentored by expatriate researchers. In addition, SIF has initiated a rotational posting for staff between Aldabra and the Vallée de Mai on Praslin and an exchange program of Rangers with the Marine Parks Authority of Seychelles was started in 1999. Stakeholders, including NGOs, state that there needs to be a more structured approach to conservation training and recommend that a formal certificate course be initiated in-country.

2.27 Research Potential is Underutilized. Research activities are driven primarily by self-funded proposals received from overseas organizations. Some of this research is part-funded by SIF and a few SIF-sponsored volunteers (two to three a year) undertake either individual or support ongoing research. Most notably, GEF funds supported significant and long-term research on Aldabra's Hawksbill turtles and the giant tortoise; University of Cape Town and SIF enabled research into the flightless rail, while the Cambridge University Coastal Research Group have initiated marine environment research focused on the impacts of the 1998 coral-bleaching event. (Aldabra is classified as a "marine biodiversity hotspot" according to a study by Conservation International and provides a unique and pristine environment to monitor coral regeneration.) A draft Science Plan, prepared by an interdisciplinary group of scientists interested in the western Indian Ocean in 1998, identified seven study areas for collaborative research with SIF – to date, action is pending with SIF.²⁵

2.28 Researchers interviewed for this assessment stated that, despite Aldabra's allure, the great difficulty in organizing access, added to the travel time and cost involved and concerns about security in the event of an accident, were disincentives to most academic institutions. As a result, research activities never achieve a critical mass, a situation not helped by the lack of coordination within SIF. Another major concern was that SIF's marketing of the research opportunities seemed to be geared to income generation, and that the fees were beyond most universities' budgets.²⁶

2.29 Safe, Convenient and Economical Access – A Vital Component to Successful Management of Aldabra – Remains to be Achieved. Until the Islands' Development Corporation built an airstrip in 1990 on Assumption Island (35 kilometers to the southeast) access to Aldabra relied on an 1,100 kilometers voyage from Mahé. Even then chartered flights from Mahé take three to five hours to reach Assumption and are very costly – about \$6,000 for a round trip.²⁷ While relatively short, the three to four hour sea crossing from Assumption can be hazardous, particularly in the southeast trades and this is also costly.²⁸ Following a serious accident, involving one of the expatriate research personnel, the Bank agreed to reallocate some funds to provide a "quick reaction" twin-hull sea boat. This boat, specified and contracted by SIF to a Victoria boatyard, proved ill-suited to its task – losing its transom during a storm while making an emergency evacuation to Assumption in 1998.²⁹ Subsequently, the boat was taken by the Coastguard for repair in Victoria and only returned to service in 2000. The Coastguard state

25. *Scientific Research and Training at Aldabra Atoll 1999-2009 – A Draft Science Plan for Discussion*. Prepared by an informal working group meeting at the Natural History Museum, London. 11 pp. 1998.

26. For example, non-SIF sponsored research staff are charged US\$100 a day for accommodation.

27. Personal communication from Michael Savy; round trip charter flights cost Rs 30-35,000. SIF quoted OED a sum of \$10,000 to make the return trip to Aldabra – in the event, only the sea trip from Assumption to Aldabra has to be paid for as ecotourists who chartered an aircraft provided free air transport to and from Mahé.

28. SIF charges \$500 for a round trip from Assumption to Aldabra.

29. During this evacuation in a severe storm, the injured SIF staff member died en route to Assumption, a journey that took 10 hours.

that a more appropriate and sea-worthy boat is essential and are ready to assist SIF in the design specification.³⁰ A more systematic and objective appraisal to identify the most effective and economic mode of access remains to be undertaken (see para 4.6.)

2.30 Research Station and Facilities were Insensitively Rebuilt. Overall, a longer-term perspective was lacking because Bank-staff did not visit Aldabra before critical design decisions were made. While GEF-sponsored civil works have greatly improved the quality of accommodation and research laboratories, they are not sympathetic to the environmental heritage stature of the site and the potential for eco-tourism, and were hostage to meeting immediate short-term needs, driven by the pressure to disperse GEF funds before the original 1996 closure date. SIF's decision to rebuild at almost three times the cost budgeted for rehabilitation – endorsed by the Bank – ignored the opportunity to capitalize on the existing old settlement housing stock, provide a secure site, and upgrade the utilities to be environmentally friendly.³¹

2.31 Eradicating of the Feral Goats Proved to be Impossible – But This May not be Such a Critical Failing. Goats were introduced to Aldabra over a century ago. Those that escaped the settlement area became firmly established, but their numbers were kept in check by human predation. Paradoxically, with the establishment of a special nature reserve in the 1970s and cessation of hunting, the tortoise population came under threat because a dramatic rise in the number of feral goats increased competition for fodder and removed shade that tortoises need to avoid over-heating.³²

2.32 Using GEF funds, SIF contracted professional hunters from South Africa to eradicate the goats, but with only modest success. After two campaigns that killed 1,054 goats, it was estimated that about 60-120 goats remained on Grande Terre, the largest southern island in the atoll.³³ This is of concern as a third of the goats (62) killed in a the five-month period after the first campaign were less than six months old, indicating a quick population recovery. Most notably, the professional hunters also culled eight feral cats, one of whom had eaten four tortoise hatchlings for its last meal. When pressed by the Bank to complete the project – the Bank even threatened to withhold payment until success was achieved—the lead hunter reported; “it would be impossible to say how long it would take even if there were unlimited funds and interest.”³⁴ The main difficulties are the extremely hostile terrain of deeply weathered and jagged limestone (*champignon*), dense impenetrable vegetation, and the decreasing efficacy and escalating cost of the “Judas-goat” method of hunting.³⁵ After the GEF funds were expended, SIF used Dutch Trust

30. This offer should be taken seriously as SIF staff on Aldabra seem quite keen to rush ahead on a new purchase without adequate consultation, repeating the earlier mistake.

31. No thought was given to the disposal of iron roof trusses and corrugated tin from the demolished buildings, and they with other debris were dumped in an unsightly heap on the main landing beach. The new buildings were built on the crest of the beach and erosion is undercutting the limestone foundation under the research accommodation block. Electricity is provided from a new diesel-driven generator that relies on fuel in 50 gallon drums man-handled up the beach from a small supply boat moored about 80 meters offshore – an environmentally hazardous activity. Similarly, no treatment was planned for camp waste and these are dumped untreated either into the sea or the bush behind the station.

32. Burke, M.G. 1988. Status, impact and conservation implications of feral goats on Aldabra atoll. *Bull. Biol. Soc. Wash.* 8, 129-138.

33. Rainbolt, R. 1995. Final Report: Feral Goat Control Project Aldabra Atoll – October 1993-May 1994 and November 1994-April 1995.

34. Rainbolt, R. 1995. Progress Report to SIF Re: Feral Goat Eradication Project 1994-95. February.

35. The Judas-goat method exploits the gregarious nature of goats. Imported goats are fitted with radio location collars and released into the wild. Hunters then track these down and shoot the feral goats with whom they associate.

Funds (para 2.37) to have two of its staff trained as hunters but to date these have only involved opportunistic rather than systematic culling, and it is believed that the feral goat population is slowly increasing.

2.33 A population inventory of the giant tortoise in 1997 showed that the total number had declined by 20-25 percent to about 100,000 over the 24-year period 1973/74 to 1997.³⁶ A follow-up survey in 2000 shows the decline continues.³⁷ The 1997 inventory showed that there are three distinct island populations on the atoll, and that the largest decrease in numbers (30-40 percent on Grand Terre where 94,000 are located) was related to formerly high population densities which results in smaller-sized tortoises. Grand Terre is also where most of the goats were found. Conversely, the tortoises have almost doubled in size on Picard and Malabar islands (6,000) where the population density is low and there were few goats. Clearly, the health of the tortoise population is probably more important than absolute numbers.

2.34 Feral goats may not be the most important threat to the turtle population. Recent research shows that rapid increase in the population of the sap-eating mealy bug (*Icerya seychellarum*) since the 1960s may have done more damage to the vegetation than the feral goats.³⁸ And Bourn (1999) *op cit* attribute the declining trends to natural population regulatory mechanisms exacerbated by a succession of dry years since 1980, and severe droughts in 1995-97, and state that the impact of goats is marginal. This suggests that the expensive campaign to eradicate feral goats, even if successful, may not be as critical as supposed at appraisal. Nevertheless, management interventions to reduce goat numbers removed obvious threats to tortoise habitat and met biodiversity conservation objectives.

2.35 **There is Still Disagreement over a Long-term Management Plan for Aldabra.** The first draft of the LTMP was completed in 1996 by GEF-funded consultants. Covering the period 1998-2005 it defined five development scenarios ranging from “no intervention or minimal interventions,” to “tourism as the dominant activity.” Each scenario was backed by a sequenced list of tasks/actions to achieve development objectives categorized as administrative, finance, staffing, tourism, research, monitoring, and environmental protection. Following Bank and SIF review, SIF formed a subcommittee to produce a more succinct version and this was circulated in mid-1998. To date, no decision has been made by SIF about which scenario to follow and the goal of sustainable management remains elusive. This stems from tensions within the Board of Trustees between those who favor minimal interventions and those favoring a more pragmatic path in which tourism generates funds that facilitate conservation and research.

Understandably, the Judas-goats soon tire of losing new companions to rifle shots and then elude recapture, thus ensuring that they too are culled as the radio collars are expensive and in short supply. Thus hunting becomes decreasingly effective.

36. Bourn, D. et al. 1999. The Rise and fall of the Aldabra giant tortoise population. Proc. R. Soc. Lond. B (1999) 266, 1091-1100.

37. Bourn, D. 2001. Status of Aldabra's Giant Tortoise Populations. Mimeo. Environmental Research Group Oxford Limited. 12pp. UK.

38. Gerlack, R and J. Gerlack. 1995. *The Living Laboratory* in Aldabra World Heritage Site. Edited by Amin, M., Willetts, D and A. Skerritt. SIF and Camrapix Publishers International, Kenya.

Dutch Trust Fund for Sustained Conservation in Seychelles

Poor Program Design made it Purpose and Working Unclear to Most Stakeholders

Project objectives were agreed between government and the Netherlands under the EMPS umbrella and subsequently the Bank took on the role of administrator of the Dutch Trust Fund (DTF). The four objectives were:

- Preservation and maintenance of unique ecosystems
- Preservation of biodiversity
- Financing of recurrent costs of above
- Training, environmental education and people's participation

2.36 The original bi-lateral arrangement included a number of implicit understandings – payment of government salaries and acquisition of land – contrary to Bank policy.³⁹ As with the other two assessed projects, the use of Bank procedures together with lack of experienced personnel and large transaction costs created problems for project supervision out of all proportion to the benefits. Poor definition of what the development objectives meant in practice and lack of selection criteria hindered systematic subproject selection and greatly increased the management effort required. There were also differences between the Bank and government over what constituted viable subprojects.⁴⁰ The lack of procedures for participation of non-governmental organizations limited their involvement, even though they had a comparative advantage and relevant experience. As a result of these problems, the second tranche of funding was delayed by over six months and this adversely affected implementation. During the course of the project there were complaints to the Bank from the Netherlands's Ambassador about these implementation problems. As a result, the second phase of the DTF was administered directly from the Royal Netherlands Embassy in Nairobi.

2.37 Eight subprojects were eventually identified and implemented. Under the first objective, to preserve and maintain ecosystems, the trust fund supported the third phase of the Aldabra goat eradication program, monitoring and conservation of the reefs of the Ile Coco Marine Park, eradication of exotic plants from Morne Seychellois to conserve endemic plants, and reforestation of seriously eroded slopes of Curieuse Island. The goat eradication program had a modest incremental impact (para. 2.31). Neither the reef monitoring and conservation activity nor the Coco de Mer replanting was completed and the impact of the project is negligible. Reforestation of Curieuse provoked a stand-off with the Bank which maintained that the species planted (*casuarinas*) was an exotic. In the event, a high die-off and continued erosion threaten sustainability of this subcomponent. The results of exotic plant eradication on Morne Seychellois are difficult to determine. Trust fund activities overlapped similar activities under sponsorship of the Commission de L'Océan Indien Project and were marred by the poor performance of the Conservation and National Parks organization which underwent severe staff attrition and reorganization, losing experienced rangers and its senior management.

39. This is a good illustration of the public sector dominance in the economy: government wanted to use "force account" to pay its own staff and argued that the Ministry of Environment was the only competent authority in the country to undertake works (planting and weeding!!).

40. The Bank disagreed with government proposals for a second reforestation project on Curieuse Island, preservation of some coastal swamps to protect biodiversity (the Bank argued the swamps had been modified extensively and were not a priority), and was adamant that a proposal to eradicate rats on Curieuse Island was either feasible or sustainable. For the record it should be noted that subsequently a partnership between government and Birdlife Seychelles worked with Frégate Island Private and were successful in completely eradicating rats from the island thus protecting the critically endangered Seychelles Magpie Robin and Seychelles Fodies.

2.38 The second objective, to preserve biodiversity, achieved one notable success by building knowledge to rehabilitate the population of sooty terns on Deneuf island. Formerly, the half million population of terns was harvested annually for sale in Mahé and there were signs that the population was declining. After adopting the recommendation of an expert study, that half the island should be set-aside as a reserve, and regulating access to the island and culling, the tern population recovered and part of the income now pays about 20% of the government's monitoring effort.

2.39 Achievement of the third objective, to provide recurrent budget support for biodiversity and ecosystem conservation/preservation efforts, was negligible. While a botanical database was established, this proved to be an enclave effort with no dissemination or linkage to ongoing monitoring or evaluation activities. Activities to promote the fourth objective, to provide training, environmental education and improved participation were extremely limited. Funds were granted to rehabilitate a boardwalk (suffering from deferred maintenance) on Curieuse Island which allowed better visitor access to mangroves – but already inadequate maintenance threatens its sustainability. Training and activities to promote participation were notable by their absence.

3. Ratings

Outcome

The outcome criteria take into account the extent to which the project's major relevant objectives were achieved, or are expected to be achieved, efficiently.

3.1 OED's rating of the outcome of the IBRD loan, GEF grant and Dutch Trust Fund is given in Table 2. The various reasons are elaborated in the following sections.

Table 2: Outcome Ratings

	IBRD Loan	GEF Grant	Dutch Trust Fund
Criteria			
Relevance	Modest	Substantial	Substantial
Efficacy	Modest	Modest	Negligible
Efficiency	Modest	Modest	Negligible
Outcome	Unsatisfactory	Moderately Unsatisfactory	Unsatisfactory

na - not available

Relevance: Were the Projects' Objectives Right?

Relevance is the extent to which the projects' objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals.

3.2 The environmental objectives of all three projects (para 1.5) were highly relevant to the Seychelles government's development priorities as embodied in the EMPS. However, the emphasis of the projects' two environmental objectives on participating in an on-going government EMPS process makes it very difficult to determine what the expected outcome of the Bank's interventions should have been. In consequence, the component outputs became a proxy of the objectives. From the Bank's perspective, the environmental objectives were and are consistent with its corporate agenda for environmentally sustainable development. The lack of a

Country Assistance Strategy, precludes evaluation of consistency with the Bank's country assistance agenda.

3.3 The environmental objectives of the GEF grant are highly relevant to the environmental needs of the Seychelles. All of the global and regional objectives remain an integral part of the government's Environmental Management Plan of Seychelles 2000-2010. Additionally, the Bank's Africa Region identifies marine oil pollution from tanker traffic as one of the most serious coastal management issues for East Africa, with the Mozambique Channel singled out as an area under particular threat.⁴¹ The vulnerability of the Indian Ocean region to oil spill accidents has been noted in the work of other agencies. The International Maritime Organization's (IMO) 1994 Report on a Regional Oil Spill Contingency Program for the Island States of the Indian Ocean Region identifies the need to protect native species and ecosystems, such as the World Heritage Site of Aldabra Atoll, the sea turtle breeding grounds, extensive coral formations, coastal wetlands and sand beaches. Despite its high relevance to these current concerns, OED rates the overall relevance of environmental objectives of the GEF grant and the Dutch Trust Fund as substantial because they focused on process rather than a definite and well-defined outcome.

3.4 The relevance of the IBRD loan's objective to improve the basis of sustained tourism by facilitating tourist access, while improving and or restoring environmentally sensitive areas, was substantial at appraisal. However, IBRD support for infrastructure-building has become much less relevant in recent years as private and commercial capital is now readily available - the willingness of luxury hotel developers to invest in remote island water resources development, and PUC's loans for water supply being good examples. Similarly, NGO and private sector willingness to raise finance and manage environmentally sensitive areas (e.g. Cousin Island) and high local awareness makes current IBRD support for these objectives of negligible relevance. Overall, the relevance of the IBRD project is rated as modest.

Efficacy: Did the Projects Achieve Their Stated Objectives?

Efficacy is a measure of the extent to which the project's objectives were achieved, or expected to be achieved, taking into account their relative importance.

3.5 The development objectives of the IBRD loan (para 1.5) were poorly defined, overlapping and make evaluation of achievements difficult. The first objective to assist the implementation of the EMPS was through three components (Table 2, components 1+2+part of 3) whose overall efficacy was modest at best. The efficacy of second objective (component 2), to support environmental programs in resource management, was negligible. Conversely, the third objective to improve the basis of sustained tourism growth by facilitating tourist access (through water supply, roads and airport) was successful in Praslin (component 3) and Baie Lazare (component 5), and efficacy is rated as substantial. The relationship of the road safety component (component 4) to the three objectives is unclear but its efficacy is substantial. Overall, on the basis of these components, OED rates the efficacy of the IBRD Environment and Transport Project as modest.

3.6 The overall efficacy of the GEF Project, supporting environmental programs in resource management, biodiversity conservation and marine pollution control (the second objective), is rated as modest. The Dutch Trust Fund was directed towards achievement of the same objective. Despite the substantial rating for biodiversity conservation, most major objectives were not met due to major shortcomings. Thus the overall efficacy rating of the Dutch Trust Fund is negligible.

41. World Bank. 1996. *Africa: A Framework for Integrated Coastal Zone Management*.

Table 2: The Extent to Which Development Components were Achieved

Component Type	Description	Relative Importance*	Achievement
<i>Environment and Transport Project (IBRD)</i>			
Institutional	1. Organizational Study of the Division of Environment	High	Negligible
	2. Water Resources and Marine Management Plans	Substantial	Negligible
Physical	3. Praslin Island Water Supply, Roads, and Airport	Substantial	Substantial
	4. Mahé Road Safety Improvements	Modest	Substantial
	5. Baie Lazare Water Supply (added 1996)	Modest	Substantial
<i>Biodiversity Conservation and Marine Pollution Abatement Project (GEF)</i>			
Institutional	1. Conservation of the Aldabra Ecosystem	High	Modest
	2. Abatement of Marine Pollution	High	Modest
	3. Protection of Sea Turtles	Substantial	High
Physical	4. Restoration of Aldabra Infrastructure	Modest	Substantial
<i>Sustained Conservation in the Seychelles (Dutch Trust Fund)</i>			
Physical	1. Preservation and Maintenance of Ecosystems	High	Negligible
	2. Preservation of Biodiversity	High	Substantial
Institutional	3. Recurrent costs for above activities	Substantial	Negligible
	4. Training, environmental education and peoples' participation	High	Negligible

* Importance is ranked by relevance to project objectives, not the cost of the component

Efficiency: Were the Projects Cost Effective?

Efficiency is a measure of the extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared with alternatives.

3.7 None of the projects had formal measures of economic efficiency or data to enable these to be calculated. Based on a qualitative evaluation, the efficiency of the IBRD loan and GEF grant is rated as modest whilst the Dutch Trust Fund's efficiency is rated negligible. Disbursement for all three projects was time-consuming and required micro-management from the Bank – overall not a very efficient process with high transaction costs for both Bank and borrower. This could have been made more efficient if more attention had been given early in the project to creating awareness of Bank procedures and building local capability to manage the project. With hindsight, it is obvious that for the infrastructure investments and procurement the World Bank loan was not the most efficient instrument to achieve development – as the road contract for Praslin illustrates. The Public Utilities Corporation told the assessment mission that loans cheaper than the Bank's are available – and without the World Bank's onerous conditionality. Indeed, the Greater Victoria Sewerage Project (launched as the first project in the new Seychelles Environmental Management Plan in June 2001), is funded by a commercial bank loan from South Africa, while two smaller plants for Beau Vallon (Mahé) and Praslin are being financed by the Kuwait Fund. In terms of operation and maintenance of the facilities provided, both projects modestly improved the earlier state of affairs. The net benefit stream from the roads and water infrastructure is probably mildly positive overall. It cannot be evaluated for the Aldabra facilities or the Dutch Trust Fund.

Institutional Development: Have the Projects Led to Better Management of Human and Financial Resources?

This is a measure of the extent to which a project improves the ability of a country or a region to make more efficient, equitable, and sustainable use of its human, financial, and natural resources through better definition, stability, transparency, enforceability, and predictability of institutional arrangements.

3.8 The overall rating for the IBRD loan is negligible. Accountability of the Public Utilities Corporation for water utilities and airport operations on Praslin still has a long way to go. Attempts to assist reorganization and staffing via an Organizational Study of the Division of Environment failed and a study to develop long range strategic planning to meet marine resource management and outer islands water resources needs was canceled.

3.9 The overall rating for the GEF grant is modest but with considerable variation in the performance of each component. The main weakness is that almost no attention was given to building local institutional capacity, and policy dialogue to create partnerships between government-sponsored environmental management and growing local NGOs' own initiatives was missing. The impact of the successful implementation of legislation banning trade in sea turtle products is rated as high. Conversely, project activities aimed at reducing marine pollution prevention had almost no impact on institutions, except at the local scale. The overall institutional development impact on the SIF was modest. Aldabra staffing and management received a temporary blip from project-provided technical assistance, but permanent local capacity and better governance were not created in SIF and the long-term impact is modest. The Dutch Trust Fund had only a modest institutional development impact in one (sooty tern bio-diversity conservation) of its eight activities and the overall rating is negligible.

Sustainability: Are the Results Likely to Last?

Sustainability is evaluated by assessing the resilience to risk of net benefits flows over time.

3.10 Infrastructure investments in water and transport under the IBRD loan are in good repair and were being fully utilized at the time of assessment. There are adequate institutional arrangements for operation and maintenance, water supplies are regular and overall sustainability looks likely.

3.11 The overall sustainability of the GEF grant activities is likely, but with qualification. On the plus side, the government has staked its tourist development policy on maintaining its environmental assets. Conversely, government is still reluctant to include NGOs as part of its environmental management even when they have a strong comparative advantage – as for example, Birdlife International. The ban on turtle trading is permanent. However, the desire to make Port Victoria an attractive trans-shipment port for east Africa means minimal regulation and low port fees which conflict with anti-pollution objectives. The sustainability of the Aldabra improvements is uncertain. The main long-term threat to Aldabra's unique biodiversity is from the current inability to effectively police the area because of the high cost of doing so.⁴² While maintenance of the research infrastructure and routine scientific and conservation monitoring is likely (particularly given the influence of the international stakeholders), this would be seriously

42. At best, this would require establishment of a Coastguard presence on Assumption Island, radar coverage of the Aldabra atoll, and adequate rangers, boats, and observation stations on the atoll's five main islands. The alternative is consecutive 15-day Coastguard patrols estimated to cost almost \$34,000 a patrol – or about \$0.9 million a year. These cost estimates were supplied by the Seychelles Coastguard, April 2001.

jeopardized if the cross-subsidy from Vallée de Mai is reduced or terminated. Ensuring good SIF staffing for Aldabra is essential for longer-term sustainability – and the historic experience is that this is unlikely unless there are continued improvements in SIF recruitment procedures and practice, conditions of service and staff management, incentives and, critically, establishment of safer and more reliable access to the atoll. Sustainability of the SIF achievements would be further improved if productive working partnerships could be established with highly effective local environmental NGOs.

3.12 The sustainability of three of four the activity areas financed by the Dutch Trust Fund are non-evaluable while that for the biodiversity conservation (sooty terns) is rated likely. Overall, however, the rating is non-evaluable.

Bank Performance

This is a measure of the extent to which services provided by the Bank ensured quality at entry and supported implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of the project).

3.13 Bank performance on the IBRD loan and GEF grant is rated unsatisfactory. Appraisal was unsatisfactory and underestimated the negative influence that continued poor economic management would have on the implementation of several components and many of its prescriptions were optimistic given the known low institutional capacity. The complexity of design made supervision problematic. The Bank performance on the GEF grant did not pay much attention to the indirect threats that may threaten long-term sustainability. Environmental aspects were unduly focused on the banning of the turtle products' trade and did not engage substantively on either the marine management or SIF policy issues. Dialogue on policies to reduce marine pollution were not pursued, neither were anti-poaching measures or increased security to safeguard Aldabra's resources. There was a singular lack of public involvement.⁴³ There was no communications strategy, and outreach to global institutions to build support for Aldabra was almost non-existent. Supervision was generally unsatisfactory. Several changes in task managers due to Bank reorganization, the difficulties of communication, too few visits to the field and a focus on disbursement rather than development objectives compounded the design problems. There was a small leverage of funding – the Dutch Trust Fund – but poorly defined objectives and inadequate Bank supervision made it generally ineffective.

3.14 Bank management of the Dutch Trust Fund is also rated as unsatisfactory. The Bank provided little design or policy direction when it agreed to administer the fund, Bank procedures complicated project implementation and supervision was ineffective. Poor coordination and disbursement of the Dutch Trust Fund led to official complaints by the Dutch ambassador and subsequent Dutch Trust Fund assistance to Seychelles is now administered directly by the Netherland's East Africa Regional Office.

Borrower Performance

Borrower performance is rated by the extent to which borrower assumed ownership and responsibility to ensure quality of preparation and implementation, and complied with covenants and agreements, toward the achievement of development objectives and sustainability.

43. GEF Council: *Public Involvement in GEF-Financed Projects*.

3.15 Borrower commitment to the project was limited. The Bank's willingness to lend for infrastructure development and environment was a strong endorsement of government policy and gave positive signals to other development partners. However, once these other partners offered finance on easier terms (or grants), some of the Bank-supported components were canceled and most of the policy and institutional strengthening activities – the Bank's *raison d'être* – were either sidelined or put on the slow track. Better governance and transparency has only improved marginally and government is only slowly reforming.

3.16 The Borrower's performance on the IBRD loan is rated unsatisfactory. There was negligible progress on the environmental management and policy components, and modest performance on the water and transport components. Conversely, despite several unresolved issues over SIF, Borrower performance on the GEF grant is rated as satisfactory. Borrower performance (due to weak management) on the Dutch Trust Fund was generally unsatisfactory although the setting-up the sooty tern conservation project is one noteworthy exception.

4. Findings and Lessons

Findings

4.1 There are four main findings:

- There were fundamental errors in the design of the assessed projects. The overwhelming scale of the Seychelles's EMPS compared with local capacity was a clear signal that implementation would be a major problem. Also the high per capita GNP cloaked significant economic and institutional weaknesses that should have been probed during appraisal. However, instead of working with government and development partners to develop a more phased approach and significantly smaller and manageable plan, the Bank selected portions and tried to submerge its identity within the partnership of donors assisting Seychelles. This did not work and the Bank had great difficulty in supervising components over which it had little control, not least because of high travel costs and difficult access, government intransigence over policy issues, and high Bank staff turnover. Compounding these problems, the Bank over-extended its supervision to supporting bilateral initiatives where it did not have a comparative advantage. And subsequent economic crises undercut support for the Bank-supported environmental policy and management components.
- Instrument choice is key to success. On remote but relatively rich island sites, complex projects are difficult to supervise and it would be simpler to provide a sectoral adjustment loan to catalyze achievement of policy and institutional objectives for public utilities and the environment. Experience has shown that Seychelles is able to raise infrastructure investment funding from the private sector.
- Sustainable environmental management depends more on building and enhancing institutional and human capital than repairing the results of degradation. In small island communities with constrained resources, the priority is to enhance local capacity through training and establishing links with local and international environmental management organizations. Ecotourism has a major role to play and government should be encouraged to divest managerial responsibility to NGOs and the private sector.

- Sustainable management of remote World Heritage Sites is a major issue. The Bank should give more attention to long-term and sustainable management linked to global environmental institutions and the broader regulatory regime (in this case better marine pollution prevention and anti-poaching measures).

Lessons

4.2 The findings of this assessment also reinforce a number of important lessons derived from GEF's annual project implementation reviews, and independent performance reviews conducted in 1998 and 2001.^{44, 45}

- The project's support for the Aldabra World Heritage Site was an enclave effort. It did not leverage additional support from global institutions or raise awareness of threats to Aldabra's sustainability. This reinforces the lesson that there needs to be greater clarity on what constitutes global environmental benefits from country-focused biodiversity programs and more emphasis on strategic delineation.
- The Bank needs to root its projects more strongly in a sustainable development context in order to address the underlying cause of global environmental deterioration such as inappropriate economic and social policies, lack of adequate legal frameworks, institutional weaknesses and information barriers.
- The emphasis on evaluating and projecting the long-term sustainability of grant-funded projects, particularly in biodiversity and international waters focal areas is weak. There is too much emphasis on outputs and not the outcome from investments. Much work needs to be done to formulate an acceptable set of biodiversity impact indicators that can be used cost-effectively by to assess impacts of projects.
- More attention needs to be given to increasing stakeholder participation and gender-inclusive processes in the projects and moving to include greater NGO and private sector involvement.
- The global lesson that lack of resources and the capacity puts national NGOs at a particular disadvantage in preparing GEF project proposals is not always correct. In the case of the Seychelles it was found that while public sector development activities in small-island states may be hindered by inadequate human resources, this can be supplemented by active and globally-linked NGOs who have a comparative advantage over their public-sector counterparts.

Postscript

4.3 The high GNP of the Seychelles has remained above the IBRD graduation benchmark and created a policy dilemma for Bank lending in the early 1990s.⁴⁶ Then the Bank argued that,

44. Porter et alia. 1998. Study of GEF's Overall Performance.

45. GEF. 2001. Fourth Progress Report on the actions to Implement the Recommendations of GEF's Overall Performance Study – GEF/C.17/Inf.8 of April 9, 2001.

46. In 1992 it was 15 percent above the IBRD graduation benchmark and in 1999, at \$6,540 per capita, it is the highest in Sub-Saharan Africa and 25 percent above the IBRD graduation benchmark.

despite the high GNP, its support and advice was needed because it was a fragile economy. In the event, all the Bank's financial support was fully utilized, yet little policy advice was taken.

4.4 Overriding macroeconomic concerns are now the key development issue. The anachronistic public sector monopoly over imports of most consumer goods and staple food items, allied with a highly regulated foreign exchange market has led to overvaluation of the Rupee, and this is having a chilling effect on would-be foreign investors and stifles local private initiative. While the recurrent budget is subject to parliamentary approval, the capital budget – representing a list of projects desired by the various line ministries – is presented to the National Assembly for information only and the extent of execution is determined by the Office of the Vice President and Minister of Finance.⁴⁷ About 68 percent of arrears of public debt was to bi- and multilateral creditors in 1999, and currently (October 2001) Seychelles is in arrears to the Bank.⁴⁸ In consequence, the Bank is cooperating with AfDB, the EU, and the IMF on macroeconomic policy advice, including technical support in the preparation of a Seychelles Macroeconomic Plan.

4.5 Unfortunately, the existing economic management problems may jeopardize government's ability to meet its substantial financial commitment (\$90 million) – including the maintenance of investments made through the two assessed projects – to the critical items in its 2000-2010 Environmental Management Plan, which has a total price-tag of \$172 million. Some of the components in this plan have additional GEF support.⁴⁹ And, as the IMF notes, the lack of adequate technical skills means that scarce foreign exchange is allocated to the employment of expatriates in key sectors. While tourism was buoyant in mid-2001, the impact of the September 2001 terrorist attack on international air travel is likely to have a chilling effect. And fewer tourists will mean a fall in the income from SIF's activities on Praslin, which underpins the management of Aldabra – thus the outlook is not good.

4.6 The relations between government and local NGOs on the environmental management of the Seychelles are uneasy. Partnership appears to be missing despite the small number of practitioners involved. In consequence there is a lack of synergy. For example, Birdlife Seychelles successfully manages ecotourism on Cousin Island and SIF manages the Vallée de Mai but there is little sharing of experiences or lessons learned. Key management issues relating to the management of SIF remain unresolved – particularly making its management more transparent, opening the door to local NGOs, developing a more active research agenda, and working with the Department of Environment.

4.7 The future of Aldabra is not assured primarily because of the unwillingness of SIF's Board of Trustees to commit to particular management and development policy and this is stifling the scaling-up of research activities. Access and security issues are unresolved and threaten sustainability. The evidence from Cousin Island and Vallée de Mai is that ecotourism can pay if it is properly managed. But for Aldabra, ecotourism is unlikely to take off unless access to the atoll is made secure. The Islands Development Corporation reckons that it would be possible to install

47. IMF. 2000. Staff Country Report No. 00/164. December 19, 2000. page 9.

48. Fiscal deficit reached a record high of 24 percent of GDP in 1998 and declined only slightly since then. External current account deficit has been about 15 percent of GDP in recent years. Currently, 60 percent of foreign exchange earnings are consumed in repayment of public debt

49. Following the completion of a GEF operation for Biodiversity Conservation, approved a medium-sized GEF grant for Avian Ecosystem Conservation, a medium-sized GEF for marine ecosystems, and an IDF grant for the second Environment Management Plan. A Western Indian Oil Spill Contingency Planning Project was approved by the Board at the end of 1998.

a small airstrip on the atoll for about \$2 million and that the footprint would not be too large.⁵⁰ Most of the SIF scientists met by the assessment mission felt that this would be more of a threat than a benefit and that water supply and damage to biodiversity would be constraining. Yet prestigious institutions such as the Smithsonian see an airstrip as prerequisite to becoming involved in research. An airstrip would also allow better rotation of regular SIF staff, setting-up of a Coastguard station, and better policing of access to the atoll. Linked to the potential for high-cost up-market tourism development on adjacent islands (Cosmoledo Group) it could generate significant income for SIF and open access to the World Heritage Site. Without some new initiatives to make SIF more open and financially viable, it is likely that stewardship of Aldabra Atoll will become too big a burden for Seychelles to bear. This raises a fundamental issue about who bears the responsibility and, more importantly, the cost, of managing global commons - the country or the international community?

50. Concrete strip 1000 meters by 12 meters, shorter if major refueling were done on Assomption Island. A round trip to Mahé at full load (20 passengers) could result in return airfares of about \$300 to \$400.

Basic Data Sheet

SEYCHELLES ENVIRONMENT AND TRANSPORT PROJECT (LOAN 3551, TF26345)

Key Project Data (amounts in US\$ million)

	Appraisal estimate	Actual or current estimate	Actual as % of appraisal estimate
Total project costs	7.00	6.33	90%
Loan	4.5	4.4	98%
GEF grant amount	1.8	1.9	101%
Cancellation			-
Economic rate of return	N.A.	N.A.	-

Cumulative Estimated and Actual Disbursements

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Appraisal estimate (US\$M)			Not Available				1.8
Actual (US\$M)							1.83
Actual as % of appraisal							101
Date of final disbursement: December 31, 1999							

Project Dates

	Original	Actual
Initiating memorandum	March 9, 1989	March 9, 1989
Appraisal	June 10, 1992	June 10, 1992
Board approval	December 22, 1992	December 22, 1992
Effectiveness	January 15, 1993	February 9, 1993
Closing date	June 30, 1997	December 31, 1999

Staff Inputs (staff weeks/cost)*

	No. staff weeks	US\$ (,000)
Identification/Preparation	73.5	171
Appraisal/Negotiation	25.5	58
Supervision	65.2	159
Completion	2.56	6
Total	116.76	394

* Includes inputs for the GEF Biodiversity Conservation and Marine Pollution Projects.

Mission Data

	Date (month/year)	No. of persons	Staff days in field	Specializations represented	Performance rating	Rating trend	Types of problems
Identification/ Preparation	Mar. 1990						
Appraisal	Jun. 1992	4		E, FA, EA, SE			
Supervision	Nov. 1992						
	Jan. 1993	4		FA, ME, EC, PE	HS	HS	-
	Mar. 1993	5		FA, ME, EC, PE, RA	HS	HS	-
	Oct. 1993	5		FA, ME, E, PE, RA	HS	HS	-
	Feb. 1994	2		TE, ES	HS	HS	-
	May 1994	4		TE, FA	HS	HS	-
	Nov. 1994	4		FA, TE	HS	HS	-
	Jul. 1995	4		TE, FA	HS	HS	-
	Feb. 1996	2		ES, FA	S	S	-
	Oct. 1996	3		SE, RE, FA	S	S	-
	May 1997	1		FA	S	S	-
May 1998	1		EN	S	S	-	
Feb. 1999	1		E	S	S	-	
Completion	Jul. 1999	1					

E=Economist, FA=Financial analyst, EA=Environmentalist. analyst, SE=Sanitary engineer, ME=Marine ecologist, EC=Ecologist, PE=Principal. economist; RA=Research assistant; TE=Transport engineer; ES=Environmental specialist; RE=Road engineer

Other Project Data

Borrower/Executing Agency:

<i>RELATED AND FOLLOW-ON OPERATIONS</i>			
Operation	Credit no.	Amount (US\$ million)	Board date
Dutch Trust Fund	TF23465		1994
Conservation of Biological Diversity	GEF		1998
Environmental Management and Hazard Prevention	IDF		1998

**SEYCHELLES BIODIVERSITY CONSERVATION AND MARINE POLLUTION
ABATEMENT PROJECT (GEF GRANT NO. 28627 SEY)**

Key Project Data (amounts in US\$ million)

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
Total project costs	2.1	2.2	105%
GEF grant amount	1.8	1.9*	105%
Cancellation	0	0	-
Economic rate of return	N.A.	N.A.	-

* Increased grant was due to appreciation of SDR against US\$.

Cumulative Estimated and Actual Disbursements

	<i>FY93</i>	<i>FY94</i>	<i>FY95</i>	<i>FY96</i>	<i>FY97</i>	<i>FY98</i>
Appraisal estimate (US\$M)	0.3	0.7	0.6	0.2	-	-
Actual (US\$M)	0.0	0.416	0.615	0.327	0.471	0.71
Actual as % of appraisal	0	22	54	72	96	105
Date of final disbursement:	December 31, 1997					

Project Dates

	<i>Original</i>	<i>Actual</i>
Identification	September 1991	September 1991
Preparation	January 1992	January 1992
Appraisal	June 1992	June 1992
Negotiations	November 1992	November 1992
Board presentation	December 1992	December 1992
Signing	January 1993	January 15, 1993
Effectiveness	January 1993	February 9, 1993
Midterm Review	November 1994	November 1994
Closing date	December 31, 1996	December 31, 1997

Staff Inputs (staff weeks/cost)

Staff costs are included under the Environment and Transport Project.

Mission Data

Missions are included under the Environment and Transport Project.

Other Project Data

Borrower/Executing Agency:

<i>RELATED AND FOLLOW-ON OPERATIONS</i>			
<i>Operation</i>	<i>Credit no.</i>	<i>Amount (US\$ million)</i>	<i>Board date</i>
Environment and Transport Project	L3551		1995
Dutch Trust Fund	TF23465		1994
Conservation of Biological Diversity	GEF		1998
Environmental Management and Hazard Prevention	IDF		1998

**SEYCHELLES DUTCH TRUST FUND FOR SUSTAINED CONSERVATION IN
SEYCHELLES (GRANT NO. 05-26345 SEY)**

Key Project Data (amounts in '000 US\$)

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
Total project costs	500	420	84
DTF grant amount	500	420	84
Cancellation	0	80	-
Economic rate of return	N.A.	N.A.	-

Cumulative Estimated and Actual Disbursements

	<i>FY93</i>	<i>FY94</i>	<i>FY95</i>	<i>FY96</i>	<i>FY97</i>	<i>FY98</i>
Appraisal estimate (US\$M)						
Actual (US\$M)			Not Available			
Actual as % of appraisal						
Date of final disbursement:						

Project Dates

	<i>Original</i>	<i>Actual</i>
Identification	-	June 1992
Signing	January 31, 1994	May 16, 1994
Closing date	December 31, 1996	December 31, 1997

Staff Inputs (staff weeks/cost)

Staff costs are included under the Environment and Transport Project.

Mission Data

Missions are included under the Environment and Transport Project.

Other Project Data

Borrower/Executing Agency:

RELATED OPERATIONS			
<i>Operation</i>	<i>Credit no.</i>	<i>Amount (US\$ million)</i>	<i>Board date</i>
Environment and Transport Project	L3551		1995
Conservation of Biological Diversity	GEF		1998
Environmental Management and Hazard Prevention	IDF		1998

Project Costs and Financing

SEYCHELLES ENVIRONMENT AND TRANSPORT PROJECT (LOAN 3551, TF26345)

Project Cost by Component (in US\$ million equivalent)

<i>Project Cost By Component</i>	<i>Appraisal Estimate US\$ million</i>	<i>Actual/Latest Estimate US\$ million</i>	<i>Percentage of Appraisal</i>
Praslin Water Supply Phase II	0.14	0.19	136
Water Resources Study and Management Plan for Outer Islands	0.96	0.01	1
Marine Resources Management Plans	0.60	0.01	2
Organizational Study of Division of Environment (DOE)	0.08	0.04	50
Praslin Road Improvement Program	1.90	2.14	113
Praslin Airport Improvements	0.28	0.00	0
Road Traffic Safety Program	0.44	0.80	182
Baie Lazare Water Supply		1.31	
GEF Grant:			
Restoration & Preservation of Aldabra Ecosystem	0.59	0.90	152
Protection of Sea Turtles	1.06	0.61	57
Abatement of Marine Pollution	0.15	0.32	213
Total Baseline Cost	6.20	6.33	
Physical Contingencies	0.42		0
Price Contingencies	0.38		0
Total Project Costs	7.00	6.33	
Total Financing Required	7.00	6.33	

**SEYCHELLES BIODIVERSITY CONSERVATION AND MARINE POLLUTION
ABATEMENT PROJECT (GEF GRANT NO. 28627 SEY)**

Project Cost by Component (in SR million)

<i>Project Cost By Component</i>	<i>Appraisal Estimate SR million</i>	<i>Actual/Latest Estimate SR million</i>	<i>Percentage of Appraisal</i>
Sea turtle protection program			
Green turtle management	1.638	1.800	110
Hawksbill turtle management	3.675	1.230	34
Aldabra – Protection and Preservation of Ecosystem			
Rehabilitation and research	0.886	2.760	311
Strengthening managerial and scientific personnel	0.997	0.540	54
Control of goats	0.820	0.750	91
Preparation of a long-term management plan	0.270	0.100	37
Tortoise census	-	0.375	-
Water reception facilities			
Phase 1A	0.495	0.710	143
Phase 1B	0.270	0.390	144
Oil spill emergency equipment	-	0.475	-
Total Financing Required	9.051	9.130	101

**SEYCHELLES DUTCH TRUST FUND FOR SUSTAINED CONSERVATION IN
SEYCHELLES (GET GRANT NO. 05-26345 SEY)**

Project Cost by Component (in US\$ million equivalent)

<i>Project Cost By Component</i>	<i>Appraisal Estimate US\$ million</i>	<i>Actual/Latest Estimate US\$ million</i>	<i>Percentage of Appraisal</i>
Curieuse reforestation	0.500	0.500	100
Curieuse board walk	0.441	0.440	100
Sooty terns phase I	0.065	0.063	97
Sooty terns phase II	0.120	0.107	89
Ile Coco National Park	0.336	0.065	19
Plantation of Coco de Mer	0.150	0.039	26
Morne Seychellois National Park rehabilitation	0.500	0.473	95
Creation of endemic plant databank	0.031	0.030	100
Goat eradication Aldabra phase III	0.250	0.242	97
Total Financing Required	2.343	1.959	82

List of Key Persons met during Assessment Mission

Government of Seychelles

Mr. George Troian, Director General, Ministry of Environment and Transport (MOET)
 Mr. Rolph Payet, Director General, Policy, Planning and Services, Division, MOET
 Mr. Sam A.G. Andrade, Director General, Port and Marines Services Division, MOET
 Ms. Vivianne Fock-Tave, Director of International Economic Affairs, Ministry of Foreign Affairs
 Lieutenant Colonel A. Ciseau, , National Coast Guard Division, Seychelles Peoples Defence Force

Government Corporations and Agencies

Mr. Glenny Savy, Executive Chairman, Island Development Corporation (IDC)
 Mr. John Collie, Managing Director, Marine Parks Authority (MPA)
 Mr. Maxwell Julie, Managing Director, Seychelles Industrial Development Corporation (SIDEK)
 Mr. Stephen Rousseau, Managing Director, Water and Sewerage Division, Public Utilities Corporation (PUC)
 Mr. Srilal Wijegoonewardene, Chief Engineer, Water and Sewerage Division, PUC
 Mr. Alone Edmond, Director, Roads Planning and Implementation, MOET
 Ms. Jeanine Lalanoé Rene, Manager, Marketing and Promotion of Small and Medium Enterprises and Craft, Seychelles Industrial Development Corporation (SIDEK)

NGO

Mr. Lindsay Chong-Seng, Executive Officer, Seychelles Island Foundation (SIF)
 Ms. Angela Valente-Libantois, Executive Officer, SIF
 Mr. George Auguste, Assistant Executive Officer, SIF
 Mr. Nimal Shah, Chief Executive, Birdlife Seychelles
 Mrs. Kerstin Henri, Project Coordinator, Environmental Management Planning, Birdlife Seychelles

On Aldabra Island

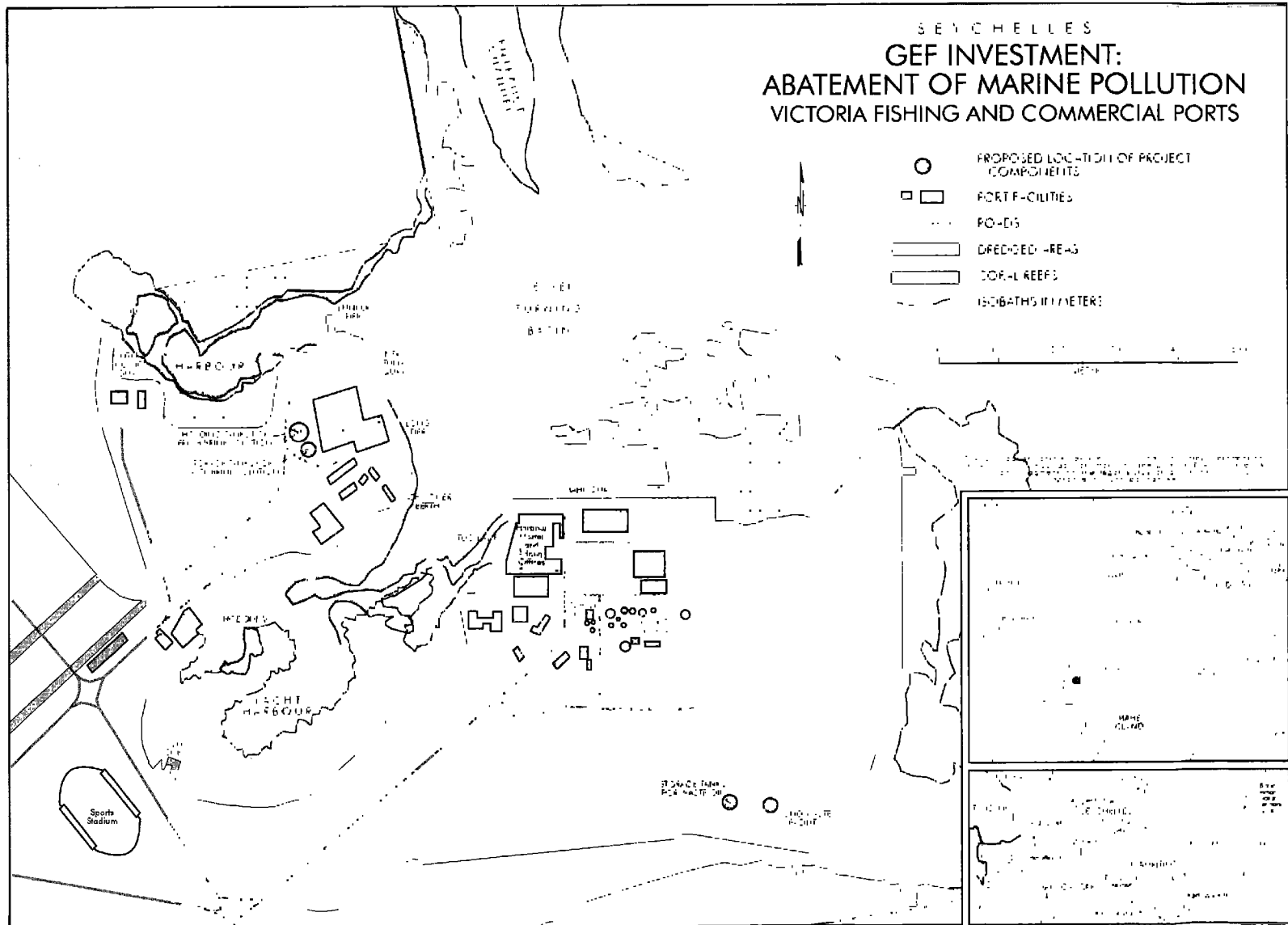
Mr. Guy Esperon, Warden Aldabra, SIF
 Ms. Jeanne Mortimer, Team Leader, Turtle Conservation Program, University of Florida and SIF
 Mr. Ross Oneless, Ornithologist, University of Capetown, South Africa and SIF
 Mr. A. Liljevik, Research Officer, SIF
 Mr. Antonis Constance, Staff, SIF
 Mr. Tony Jupiter, Staff, SIF

Praslin Island

Atterville Cedras, Warden, Valle de Mai World Heritage Site

Private Sector

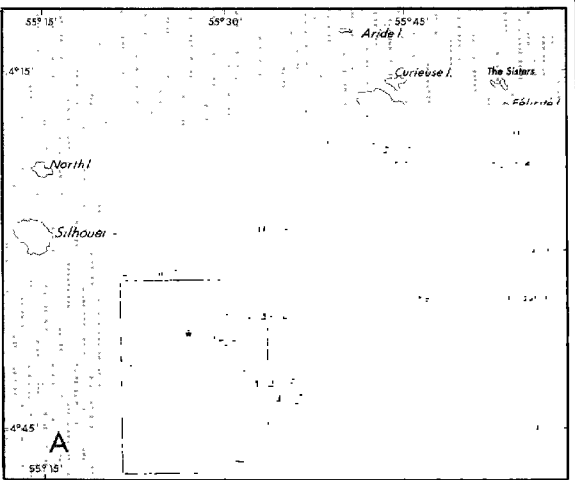
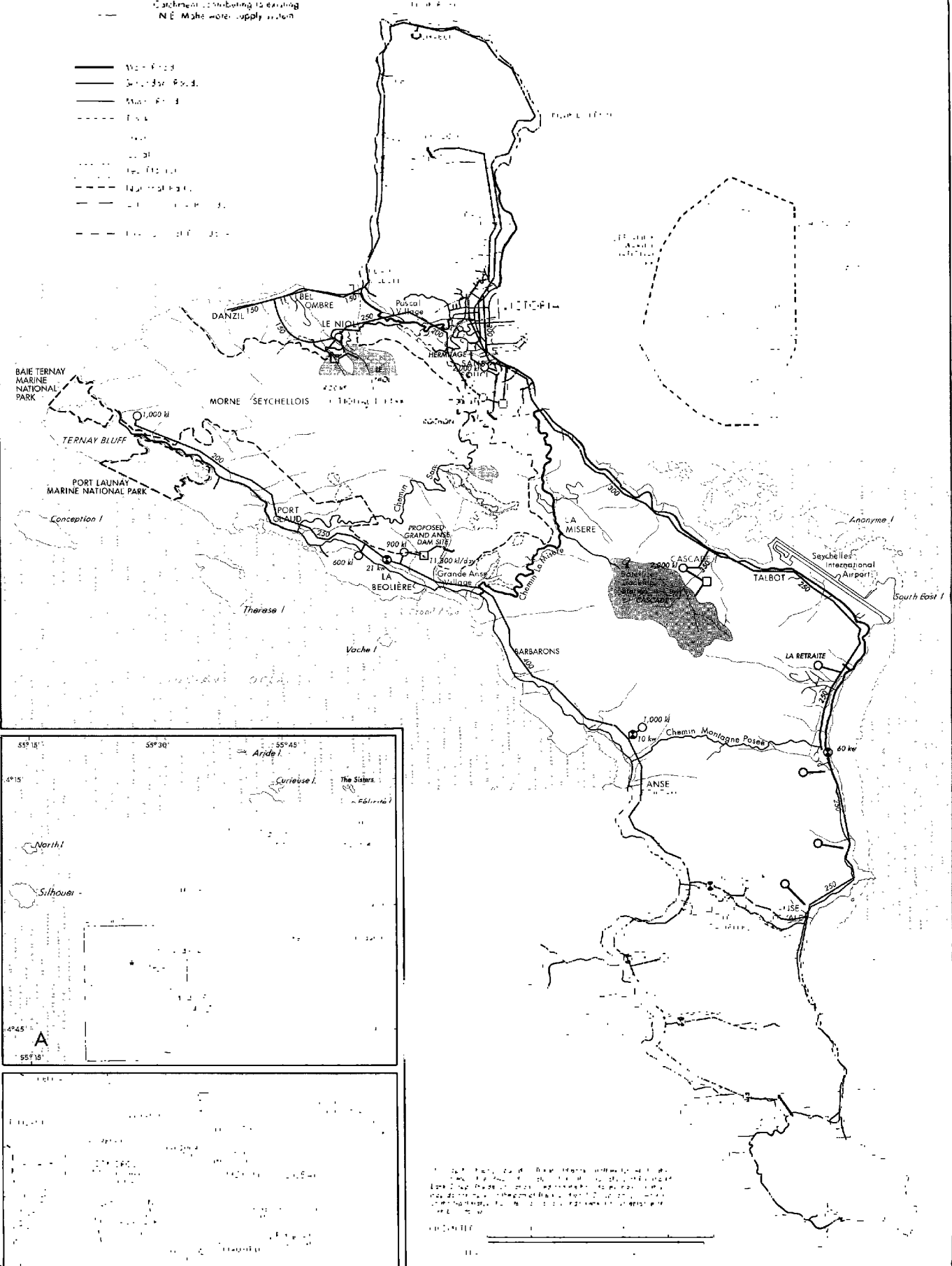
Mr. Marlawn Montana, Operation Marketing Manager, STAR



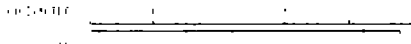
SEYCHELLES INFRASTRUCTURE AND ENVIRONMENT PROJECT MAHÉ INTEGRATED WATER SUPPLY PROGRAM

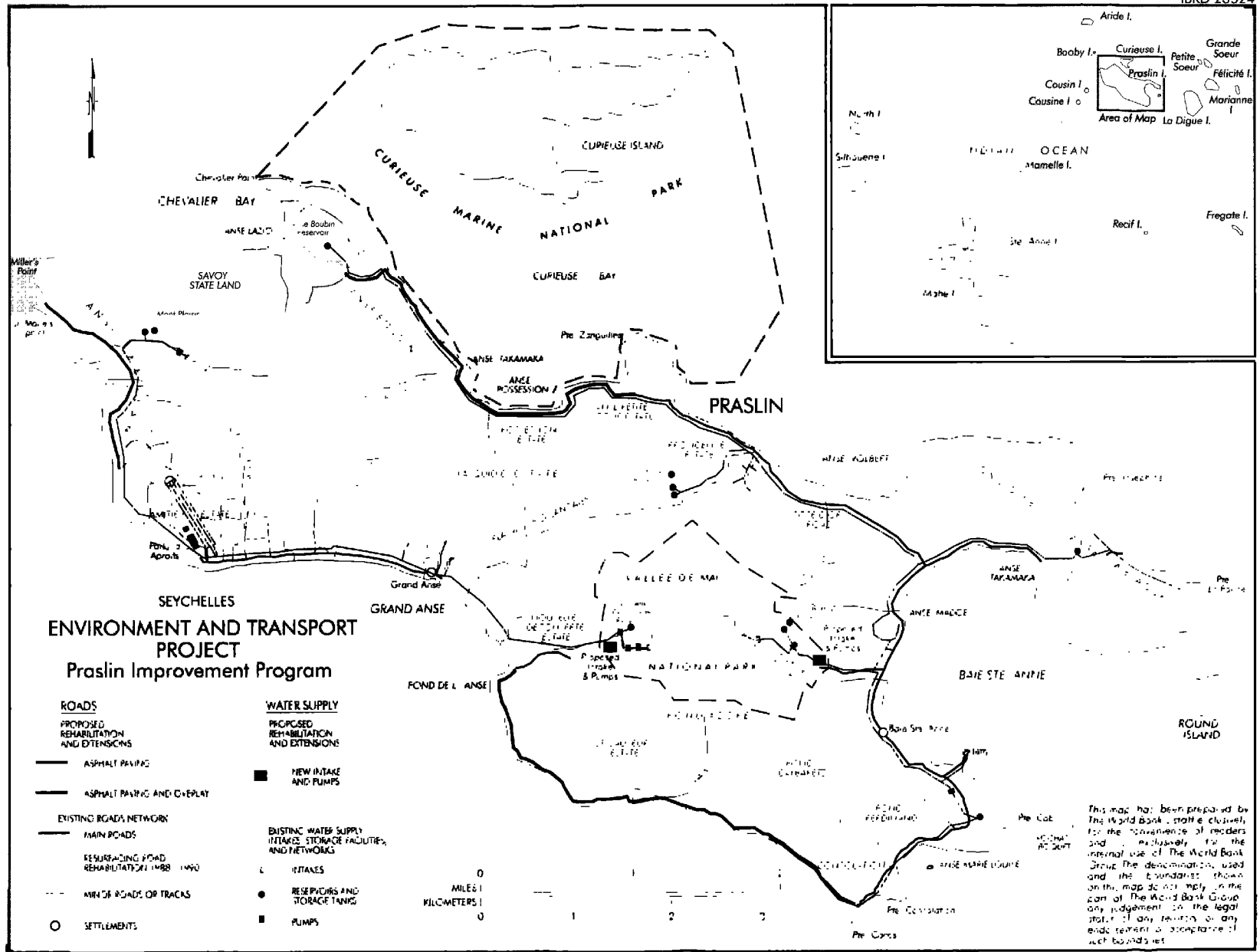
- Pipeline (diameter in mm)
 Bar
 Treatment Works
 Service Reservoir
 Pumping Station
 Catchment contributing to existing N.E. Mahe water supply system

- Main Road
 Secondary Road
 Main Road
 Track
 Footpath
 International Boundary
 National Boundary
 Proposed Pipeline



This map was prepared by the Infrastructure and Environment Project for the Mahé Integrated Water Supply Program. It is based on the 1:50,000 scale topographic map of Mahé island, 1984 edition, published by the National Institute of Cartography, Mauritius. The map is a reproduction of the original map and is not to be used for any other purpose without the permission of the National Institute of Cartography, Mauritius.





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