Document of
The World Bank

Report No: 39209-AFR

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED GRANT FROM THE
GLOBAL ENVIRONMENTAL FACILITY TRUST FUND

IN THE AMOUNT OF US$11.0 MILLION

TO THE

REPUBLIC OF SOUTH AFRICA

(FOR COMOROS, KENYA, MADAGASCAR, MAURITIUS, MOZAMBIQUE, SEYCHELLES, SOUTH AFRICA, AND TANZANIA)

FOR A

WESTERN INDIAN OCEAN GEF-MARINE HIGHWAY AND COASTAL CONTAMINATION PREVENTION PROJECT

April 18, 2007

Africa Transport
Regional Integration
Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective February 28, 2007)

Comorian franc 1 = US$0.0026
US$1.00 = Comorian franc 373.91

Kenya shillings 1 = US$0.01423
US$1.00 = Kenya shillings 70.25

Malagasy ariary 1 = US$4.9875
US$1.00 = Malagasy ariary 2,005

Mauritian rupees 1 = US$0.0307
US$1.00 = Mauritian rupees 32.52

New Mozambique metical 1 = US$0.0380
US$1.00 = Meticals 26.26

Seychelles rupees = US$0.1633
US$1.00 = Seychelles rupees 6.12

South Africa rand 1 = US$ .1407
US$1.00 = South Africa rand 7.10

Tanzania shillings 1 = US$ 7.88
US$1.00 = Tanzania shillings 1268

FISCAL YEAR

January 1 to December 31

ABBREVIATIONS AND ACRONYMS

CAS	Country Assistance Strategy
CLC	International Convention on Civil Liability for Oil Pollution Damage
COLREG	Convention on the International Regulations for Preventing Collisions at Sea
DANIDA	Danish International Development Agency
EC	European Commission
FMR	Financial management report
FUND	International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage
GEF	Global Environment Facility
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IHO	International Hydrographic Organization
IMO	International Maritime Organization
IOC	Indian Ocean Commission
MARPOL	International Convention for the Prevention of Pollution from Ships
OPRC	International Convention on Oil Pollution Preparedness, Response and Cooperation
SAMSA	South African Maritime Safety Authority
SHOM	Service Hydrographique et Océanographique de la Marine
SOEs	Statements of Expenditure
SOLAS	International Convention for the Safety of Life at Sea
UKHO	United Kingdom Hydrographic Office
UNCLOS	UN Convention on the Law of the Sea
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
WIO-LaB	Addressing Land-based Activities in the Western Indian Ocean Program
WIO MEP	Western Indian Ocean Large Marine Ecosystem Project

Acting Vice President:	Hartwig Schafer
Country Manager/Director:	Mark Tomlinson
Sector Manager:	C. Sanjivi Rajasingham
Task Team Leader:	Abdelmoula M. Ghzala

WESTERN INDIAN OCEAN
GEF-Marine Highway and Coastal Contamination Prevention Project

CONTENTS

WESTERN INDIAN OCEAN
GEF-Marine Highway and Coastal Contamination Prevention Project

Project Appraisal Document

Africa Region
AFTTR

Date: April 18, 2007	**Team Leader:** Abdelmoula M. Ghzala
Country Manager/Director: Mark Tomlinson **Sector Manager/Director:** C. Sanjivi Rajasingham **Global supplemental ID:** **Project ID:** P078643 **Lending Instrument:** GEF Grant **GEF Focal Area:** International Waters **Supplement Fully Blended?:** N/A	**Sector(s):** Transport, ports **Theme(s):** Environment **Environmental screening category:** C **Safeguard screening category**: S2

Project Financing Data

[..] Loan [ ] Credit [X] Grant [ ] Guarantee [ ] Other:

For Loans/Credits/Others:
Total Bank Financing (US$m):
Proposed Terms (IBRD):

Financing Plan (US$m)

Source	Local	Foreign	Total
Indian Ocean Governments	0.6	1.2	1.8
GEF	2.6	8.5	11.0
Others identified donors	2.1	11.1	13.1
Total (figures may not add up to total due to rounding):	5.2	20.8	26.0

Grant recipients: Republic of South Africa on behalf of Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, South Africa, and Tanzania (beneficiaries).

Responsible agency: South African Maritime Authority and the Indian Ocean Commission
South African Maritime Authority
Address: 141 Lynnwood Road
Brooklyn 0181
Hatfield 0028
Contact Person: Carl Briesch, Acting Chief Executive Officer
Tel: +27-12-366-2600 Fax: +27-12-366-2601 Email: cbriesch@samsa.org.za
Indian Ocean Commission
Address: Q4 Sir Guy Forget
Quatre Bornes
Mauritius
Contact Person: Monique Andreas-Esoavelomanroso
Tel: +230-425-9564, Fax: Email: coi7@bow.intnet.mu

GEF estimated disbursements (Bank FY/US$m):							
FY	2007	2008	2009	2010	2011		
Annual	0.1	2.0	4.1	3.8	1.0		
Cumulative	0.1	2.1	6.2	10.0	11.0		

Project implementation period: June 2007–June 30, 2011 **Expected effectiveness date:** June 15, 2007 **Expected closing date:** June 30, 2011.				
Does the project depart from the CAS in content or other significant respects? ***Ref. PAD A.3***		**Yes**	X	**No**
Does the project require any exceptions from Bank policies? ***Ref. PAD D.7***		**Yes**	X	**No**
Have these been approved by Bank management?		**Yes**	N/A	**No**
Is approval for any policy exception sought from the Board?		**Yes**	X	**No**
Does the project include any critical risks rated "substantial" or "high"? ***Ref. PAD C.5***	X	**Yes**		**No**
Does the project meet the Regional criteria for readiness for implementation? ***Ref. PAD D.7***	X	**Yes**		**No**

Project development objective ***Ref. PAD B.2, Technical Annex 3:***
The project's development objective is to increase the safety and efficiency of navigation. This will be achieved by establishing a demonstration marine highway to guide ships around environmentally sensitive areas and through selected busy sea lanes and by supporting widening the regional agreement on port state control and implementation of its provisions.

Global environment objective ***Ref. PAD B.2, Technical Annex 3***
The project's medium to long-term global environmental goals are to reduce the risk of ship-based environmental contamination (such as oil spills from groundings and illegal discharges of ballast and bilge waters) and to strengthen the capacity of countries to respond to oil or chemical spill emergencies in the region.

The project has three specific global environmental objectives. The first is to ascertain the economic, technical, and institutional feasibility of introducing modern aids to navigation systems in the region, such as an electronically supported marine highway, to guide ships through sensitive areas and to encourage monitoring of the movements and activities of fishing and other vessels operating within countries' territorial waters. The second objective is to support widening the existing regional agreement (June 5, 1998) on port state control and implementation of its provisions. The third objective, focusing on Kenya, Mozambique, South Africa, and Tanzania, is to reduce risks of environmental damage to beaches, fishing grounds, and other domestic resources from spills of oil and chemicals. This will be achieved by supporting efforts of Kenya, Mozambique, South Africa, and Tanzania to become part of a regional oil spill response plan, by completing the identification and mapping of environmentally sensitive areas along coasts and sea lanes, and support regional collaboration with the west Indian Ocean island states.

Project description ***Ref. PAD B.3.a, Technical Annex 4***
The project will support (a) the installation of a demonstration modern aids to navigation systems (marine highway) and its assessment, (b) capacity building for prevention of coastal and marine contamination, (c) building of a regional oil and chemical spill response, and (d) widening of the regional agreement on port state control and implementation of its provisions, support for monitoring of fisheries activities, activities to promote coordination and collaboration with other relevant projects, and preparatory activities for the next phase of the marine highway development (assuming the concept proves feasible and provides adequate benefits to justify its costs).

Which safeguard policies are triggered, if any? ***Ref. PAD D.6., Technical Annex 10.*** None.

Significant, non-standard conditions, if any, for: ***Ref. PAD C.7.***
None.

Board presentation: None
Loan/credit effectiveness: Recruitment of regional and sub-regional coordinators, and finalization of tripartite agreement.
Covenants applicable to project implementation: None.

A. STRATEGIC CONTEXT AND RATIONALE

1. Country and sector issues

The growing population and expanding urbanization and economic activity in the coastal zones coupled with virtually nonexistent management are increasingly placing marine and coastal resources under threat. The shipping lanes along the East African coast are among the busiest in the world, carrying over 30 percent of the world's crude oil supplies. At any given time, hundreds of oil tankers, many of them very large crude carriers, transport crude oil from the oilfields of the Persian Gulf and Indonesia to Europe and the Americas. Over 5,000 tanker voyages per year take place in the sensitive coastal waters of Comoros and Madagascar and along the coast of East Africa, passing in close proximity to the World Heritage site of Aldabra Atoll (Seychelles). Oil and gas exploration programs operating in the region add to the risks. A large oil spill could also severely harm the economies of Mozambique, South Africa, Tanzania, Kenya, and the small island developing states by damaging fishing grounds, beaches, and diving and deep-sea fishing areas; disrupting shipping; and shutting down activities that depend on seawater intake.

Moreover, destruction of coral reefs and illegal fishing are major problems off the shores of the countries of the region. The western Indian Ocean region is one of the last areas in the world where fishing activities are largely unregulated. Vessels from Europe and eastern Asia heavily exploit tuna cape hake, blackhand sole, and other species within the exclusive economic zones, but land the catch outside the region, without reporting the catch to the national authorities. Improvements in fishing methods have led to greater numbers, larger sizes, and increased variety of fish being caught. As a consequence fish stocks are shrinking and several species face potential extinction.

Although most of the countries in the region are party to the UN Convention on the Law of the Sea (UNCLOS), have declared a 200-mile exclusive economic zone, and are in the process of establishing claims to the continental shelf, they lack the institutional and financial capacity to effectively monitor activities of vessels and to enforce their control over activities taking place within their jurisdictions and responsibilities. The lack of enforcement is contributing to the destruction of the coral reefs, to unsustainable exploitation of fisheries, and to significant damage to nontarget species, such as sea tortoises, porpoises, dolphins, and whales.

Countries of the region recognize that they cannot protect their shared marine and coastal resources working alone. Rather they need to work together to improve the safety of navigation through regional waters and to enforce regulations intended to protect fishing and other marine resources from excessive exploitation. They also need assistance to pilot new technologies that have the potential of significantly improving the safety of navigation at reasonable cost, such as a marine highway. The project will help governments achieve their objectives by supporting creation of a mechanism of regional cooperation and by piloting a marine highway.[1]

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[1] A marine highway is a physically-defined navigation route, providing a safe and secure navigation channel supported by continuously updated nautical charts, in accordance with the provisions of SOLAS (in paper or electronic format), maritime safety information, real-time navigation aids, and other information systems (weather updates, traffic management, access to ports, and the like). It allows ships to optimize operational safety and sailing efficiency. A marine highway will be supported by modern data management and information techniques such as

Eligibility for GEF financing

Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, South Africa, and Tanzania are eligible for Global Environment Facility (GEF) financing for international waters projects. All have signed the key international maritime conventions aimed at limiting contamination and increasing the safety of navigation (International Convention on Civil Liability for Oil Pollution Damage (CLC92)), the International Convention for the Safety of Life at Sea (SOLAS), and the International Fund for Compensation for Oil Pollution Damage (FUND92).[2] All except for South Africa have ratified and the International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC90). All except for Madagascar have ratified the Convention on the International Regulations for Preventing Collisions at Sea (COLREG, 1972).[3] And all other than Tanzania have ratified at least one article of the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78/98).[4] (See annex 1 matrix for the detailed status of conventions).

2. Rationale for Bank/GEF involvement

The proposed project will help to catalyze and coordinate support to protect the globally-significant marine and coastal resources of the western Indian Ocean region, a role that the GEF has been uniquely designed to fill. Without such support from the GEF, the countries are not likely to come together to undertake activities that will demand local resources, but that provide regional and global benefits.

The Bank/GEF has considerable experience in supporting countries' efforts to work cooperatively to reduce transboundary pollution and increase the safety of navigation. Through its growing portfolio of regional seas and international waters projects, it has developed the skills and knowledge to help countries build national and regional capacity to manage programs that cut across countries. Through its management of the recently completed Western Indian Ocean Oil Spill Contingency Project it has developed insight into the environmental, social, and institutional issues facing the countries of the region and will draw on this knowledge in designing and managing the proposed project. Through this experience the Bank/GEF has also forged positive working relationships with many of the governments and partners that will be involved in the proposed project. Bank/GEF involvement will also help in mobilizing resources and expertise from other partners, including multilateral organizations and industry groups representing both the shipping and oil industries, and thereby improve project design, implementation, effectiveness, and sustainability.

The International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA), the International Hydrographic Organization (IHO), the International Maritime Organization

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global positioning systems, shore-based vessel traffic management systems with adequate on-board equipment, and electronic nautical charts, to the extent these are available.

[2] The full name is International Convention on the establishment of an International Fund for Compensation for Oil Pollution Damage, 1992.

[3] The full name is Convention on the International Regulations for Preventing Collisions at Sea, 1972.

[4] The full name is International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocols of 1978 and 1998 relating thereto.

(IMO), the United Kingdom Hydrographic Office (UKHO), and the Service Hydrographique et Océanographique de la Marine (SHOM) of France will be close partners in preventing marine contamination. The United Nations Environment Program (UNEP) through its Regional Seas Program will be a partner in protecting critical habitats and biodiversity. The oil industry and the shipping and tanker industries will bring knowledge of best practices in preventing contamination from ships. France has confirmed its participation as a partner through La Réunion island. The secretariat of the Nairobi Convention will be a partner in supporting the development or enhancement of a regional center for the coordination of pollution preparedness and response activities of the region (to be established). This partnership will also assist in ensuring the sustainability of such a center when the project comes to an end.

3. Higher level objectives to which the project contributes

The project has two medium to long-term global environmental goals. The first is to help prevent ship-based environmental contamination (such as oil spills from groundings and illegal discharges of ballast and bilge waters). The second, focusing on Kenya, Mozambique, South Africa, and Tanzania, is to reduce risks of environmental damage to beaches, fishing grounds, and other domestic resources from spills of oil and chemicals from oil or chemical spills.

The proposed project is in line with the country assistance strategies (CASs) of the participating countries. The Kenya CAS (2004) names the proposed project as important not only to protect coastal and marine resources, but also to promote regional integration. The Mozambique CAS (2003) and the country partnership strategy for Mauritius (2006) emphasize the importance of protecting coastal and marine resources to promote sustainable development of tourism, a major source of growth in the countries. The Madagascar CAS (2003) places environmental protection at the center of its strategy, noting the strong linkages between environmental degradation and high levels of poverty. The interim strategy note for Comoros (2006) and the CAS for Tanzania (2000) discuss environmental protection as a key element of their strategies for sustainable development. No recent CASs have been produced for Seychelles or for South Africa. Both countries, however, have taken strong action to protect their coastal and marine resources in recognition of the importance of the tourism and fishing industries to their economies.

The project's global objectives are also in line with the objectives of the Nairobi Convention, which are to encourage regional initiatives and cooperation among the states for the protection, management, and development of marine and coastal resources of the eastern African region. They are also consistent with those of the CLC92, OPRC90 and OPRC-hazardous and noxious waste protocol, FUND92, MARPOL 73/78, SOLAS73, COLREG72 and other conventions of the International Maritime Organization. Collectively, these conventions require signatories to take coordinated action to protect marine and coastal resources and ensure the safety of navigation.

The project will contribute to the goals of "GEF operational program 10" in several ways, and its strategic priority 3 (undertake innovative demonstration projects for reducing contaminants). It is expected to demonstrate ways to overcome barriers to adoption of best practices that limit contamination of the international waters environment by developing a marine highway to aid the navigation of ships through particularly hazardous seaways. The project will also leverage

significant private sector support to demonstrate the value of using modern technology to help ships avoid collisions in busy marine corridors. The modern technology will also support countries efforts to monitor and control fishing in their territorial waters.

The project also satisfies the criteria for the operational strategy for international waters—to assist groups of countries to better understand the environmental concerns of their international waters and work collaboratively to address them—through its support for analytical work and establishment of information systems, for ratifying conventions and translating their provisions into law, and for building institutional capacity to more comprehensively address transboundary water-related environmental concerns.

B. PROJECT DESCRIPTION

1. Lending instrument

A GEF grant of US$11.0 million will finance a full-sized project. GEF financing is expected to establish technological standards and to reduce costs to early users of the technology.

2. Project development objective and key indicators

The project's development objective is to increase the safety and efficiency of navigation. This will be achieved by establishing a demonstration marine highway to guide ships around environmentally sensitive areas and through selected busy sea lanes and by supporting widening the regional agreement on port state control and implementation of its provisions.

Key performance indicators include:

- Number of passages of vessels traveling through the region using the marine highway and its electronic charts for navigation.
- Number of ship inspections carried out at major ports in the region.

3. Project global environment objective and key indicators

The project's medium to long-term global environmental goal is to reduce the risk of ship-based environmental contamination (such as oil spills from groundings and illegal discharges of ballast and bilge waters) and to strengthen the capacity of countries to respond to oil or chemical spill emergencies in the region.

The project has three specific global environmental objectives. The first is to ascertain the economic, technical, and institutional feasibility of introducing modern aids to navigation systems in the region, such as an electronically supported marine highway, to guide ships through sensitive areas and to encourage monitoring of the movements and activities of fishing and other vessels operating within countries' territorial waters. This will contribute to the objectives of the Agulhas and Somali Large Marine Ecosystem Program, which are to assess the large marine ecosystem through transboundary diagnostic analyses and the preparation of strategic action programs. The second objective is to support widening the existing regional agreement

(June 5, 1998) on port state control and implementation of its provisions. The third objective, focusing on Kenya, Mozambique, South Africa, and Tanzania, is to reduce risks of environmental damage to beaches, fishing grounds, and other domestic resources from spills of oil and chemicals. This will be achieved by supporting efforts of Kenya, Mozambique, South Africa, and Tanzania to become part of a regional oil spill response plan, by completing the identification and mapping of environmentally sensitive areas along coasts and sea lanes, and by and support regional collaboration with the west Indian Ocean island states.

Key performance indicators include:

- Modern aids to navigation systems (forming the pilot marine highway) installed and the feasibility of the approach for the region assessed with the full involvement of industry groups. Should the concept prove feasible, a plan for further development is put into place.
- Action plan for monitoring of fisheries activities developed by midterm review, and some of its main recommendations implemented thereafter.
- Agreement reached with Madagascar and Comoros to join the regional agreement on port state control, signed on June 5, 1998.
- Agreement reached by all eight states participating in the project on the arrangements for cooperation in cases of major pollution incidents.

4. Project components

The project includes Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles South Africa and Tanzania and as a partner La Réunion (France), covering a combined coastline of 13,300 kilometers. Similar to the model developed for the Straits of Malacca and Singapore, the development of the Western Indian Ocean marine highway will be implemented in phases. The first phase (the project) will establish as a pilot an electronically supported marine highway for the region's major shipping route, assess the feasibility of the concept, and, should the concept prove viable, finance preparation of a follow-up project agreed upon by the countries. The second phase (or a follow-up project) will build on the experience of the first phase and establish a full marine highway covering all major shipping routes of the western Indian Ocean region.

Components include:

Component A: Development of a regional marine highway and institutions. This component will support the establishment of a network of electronic navigational charts incorporating where possible information on environmental assets (reefs, nurseries, migration areas, and the like) in conjunction with the differential global positioning system and other maritime technologies, which will form the backbone of a marine highway extending from South Africa to the Mozambican port of Nacala to the Comoros and to a point beyond the Aldabra. Vessels using this route will be electronically supported by the segments of the marine highway in South Africa, at Inhambane, at Nacala, at Grande Comoros, and at a point beyond the Aldabra (the islands are not inhabited, so the most appropriate place to install a permanent automatic information system to guide ships safely past the islands must be defined during execution). As

the area between these points is in deep water and is far from the coasts, the area will be surveyed and electronic nautical charts will be produced and provided to vessels.

The component includes six subcomponents: (1) production of nautical charts and publications incorporating information on environmental assets; (2) maintenance of these charts and publications; (3) survey and rehabilitation of the main aids to navigation on the route of the marine highway; (4) establishment of an automatic information service; (5) support to search and rescue activities; and finally (6) the evaluation of the demonstration phase and preparation of the second phase if the demonstration phase proves to be feasible and sufficiently beneficial to justify costs.

It is expected that the large vessels transporting oil and chemicals will choose to use the marine highway, rather than sail outside its boundaries, because doing so will reduce their risks of groundings and collisions and increase their efficiency of navigation. The technology of the marine highway is expected to assist fishing authorities with monitoring, control, and surveillance of large fishing vessels. All countries of the region either already require or are planning to require fishing vessels that operate in their territorial waters to install and operate an automated satellite-linked vessel monitoring system on their ships. Vessel monitoring systems provide information to the fishing authorities on the location of a vessel, speed, and course of a vessel. They allow the authorities to check whether the vessel operates where fishing is not allowed, holds the necessary licenses and quotas to fish in the area, or has sailed to a port without declaring its landings. The proposed project will collaborate with the national fishing authorities to ensure that the technology of the marine highway is as useful as possible to monitor and control fishing activities. Where fishing boats are not already using a vessel monitoring system, mechanisms to hasten their adoption—such as requiring them to install the necessary equipment on their boats in exchange for a license—will be explored with the fishing authorities. The evaluation of the demonstration project will also involve the fishing authorities.

During the course of the project, the major ports and approaches in the beneficiary countries will be evaluated and where necessary selected surveys undertaken to provide for electronic nautical charts of these areas. In conjunction with the IHO, these surveys will be used to improve the provision of maritime safety information by the states in the region.

Component B: Capacity building for prevention of coastal and marine contamination. This component contains four subcomponents. The first will support seminars and workshops on environmental sensitivity mapping, issues related to implementation of conventions, marine navigation safety, prevention of marine and coastal pollution, risk assessment and development of appropriate response strategies, and related matters. The second subcomponent will support the creation of site-specific pollution prevention and contingency management plans for coastal and marine hotspots. The third subcomponent will support the development of a methodology to identify and assign values to the key environmental resources in the region. The fourth will support the development of a regional database and a geographic information system on the marine environment, marine and coastal resources, ship movements, ship waste, and sea-based activities.

Component C: Building capacity for regional oil spill response. This component will assist Kenya, Mozambique, South Africa, and Tanzania to (1) translate relevant IMO conventions (primarily OPRC, FUND, and CLC conventions) intended to protect the marine and coastal environments and to improve the safety of navigation into national laws and regulations, and build capacity to implement the provisions of the conventions; (2) develop national oil and chemical spill contingency plans; (3) assess the needs and provide specifications for the required equipment; and (4) facilitate regional agreements, the development of a regional contingency plan, and the establishment of a regional center to coordinate national actions and to monitor regionwide environmental conditions and causes of degradation and damage. GEF financing will in particular assist countries to ratify conventions and to enact the enabling legislation. The IMO, the EC, and France have committed to support, contribute to, or cofinance the preparation of the national oil spill contingency plans.

Component D: Port state control, fisheries monitoring, and project coordination and management. Port state control allows countries to require that ships entering their ports meet the requirements of the major conventions of the IMO on the safety of navigation and the prevention of pollution from ships regardless of whether or not the flag state is party to the conventions. Port state control also helps to make the operations of illegal, unreported, unregulated fishing fleet unprofitable by eliminating opportunities to land and sell fish that have been harvested in violation of the law. A regional port state control arrangement provides an effective tool to ensure that ships using international navigation routes and calling on major ports in a region comply with the rules and standards set out in the applicable IMO conventions.

A memorandum of understanding for port state control in the Indian Ocean was signed on June 5, 1998, by Australia, Bangladesh, Djibouti, Eritrea, India, Iran, Kenya, Maldives, Mauritius, Mozambique, Myanmar, Seychelles, South Africa, Sri Lanka, Sudan, Tanzania and Yemen. Subcomponent 1 (promotion of port state control) will support increased involvement of all neighboring countries and the widening of this regional agreement to include Madagascar and Comoros. Based on the work undertaken or envisaged by the IMO, this component will also promote its implementation in countries participating in the project, covering issues such as procedures for inspection, and detention of ships, and arrangements for exchanging information. It will help to strengthen capacity for enforcement of the provisions of port state control through training of inspectors to international standards in port state control. Finally, it will support several regional workshops aimed at developing consensus among countries on priority actions, administrative arrangements, and coordination mechanisms to be used in promoting improved management of regional marine and environmental resources.

Subcomponent 2 (support for monitoring of fisheries activities) will support the development of an action plan for fisheries monitoring. It will also support implementation of its main recommendations, assuming finance is available, and no other organization or project are able to finance these.

A key element of the project is its commitment to coordinate and collaborate with other projects in the region that are working to protect the marine and coastal environment. Subcomponent 3 (coordination with other GEF-supported projects) will support activities to facilitate such coordination and collaboration, such as establishing and maintaining a project website that links

to the GEF Secretariat and International Waters-Learn website, hosting regional workshops, attending the workshops and events of others, participating in the GEF-International Waters Conferences (including providing exhibits), and the like. A budget of about US$100,000 from the project has been allocated for coordination activities.

Assistance will be needed at the regional, subregional, and national levels to manage the project and coordinate the various activities. Subcomponent 4 (project coordination and management) will finance equipment, consultants, operating costs, and logistical support required by the South African Maritime Safety Authority (SAMSA) and the Indian Ocean Commission (IOC) to ensure that the project is implemented efficiently and to build sustainable capacity of the participating entities to manage the development of the marine highway and to coordinate activities after the project is completed. This subcomponent will support the activities of the national project coordinators, and finance technical assistance and studies as needed during project implementation. It will support creation of capacity for monitoring key performance indicators and for evaluating project implementation progress and impact. This component will also support the establishment of mechanisms for sustainable financing of the development of the marine highway and other infrastructure and capacity created through the project.

GEF funds will complement technical assistance provided through the other partners in the program, and will finance only activities that contribute to global environmental benefits. Specifically, GEF funds will finance activities designed to prevent marine and coastal contamination and investments that support surveillance and enforcement of laws and regulation governing the shipping and fisheries industries. This includes development and installation of modern aids to navigation, support for widening and implementing the regional agreement on port state control, and activities to promote coordination and collaboration among relevant projects. The oil spill contingency planning activities are largely baseline activities, and the GEF will allocate limited funding for these, focusing on the activities designed to widen the regional plan and strengthen regional collaboration.

5. Lessons learned and reflected in the project design

To safeguard the marine and coastal ecosystems of the western Indian Ocean islands from the risks and consequences of oil spills, the GEF in 1998 financed the West Indian Ocean Islands Oil Spill Contingency Planning Project, which closed June 30, 2004. The project achieved its development objectives. A GEF Secretariat-managed project review completed in August 2002 rated as satisfactory the project approach, the project's country ownership, stakeholder participation, and sustainability. The review also rated as high the project's cost effectiveness and replicability. Importantly, the review noted that benefits are likely to be sustained once the project is complete. Lessons learned from this project and others include:

- *Obtaining government commitment during project preparation to specific arrangements for institutional and financial sustainability helps to ensure that project investments will be sustained after the project closes.* The proposed project includes a subcomponent focused on developing mechanisms for the sustainable financing of the marine highway, the oil and chemical spill response capacity, and other project investments to ensure that the benefits of the project are sustained. The private shipping industry is expected to contribute

significantly to the costs, because it will benefit from the increased efficiency and safety of navigation.

- *The choice of implementing agency and of project coordinator is key to the successful implementation of a complex project involving several countries and partners.* Implementing a complex project, involving many countries and partners, requires deep understanding of the issues facing the participating countries and the region as a whole and the backing of a regional organization. The Indian Ocean Commission (IOC), an established regional body based in Mauritius, was able to successfully coordinate the regional activities of the West Indian Ocean Islands Oil Spill Contingency Planning Project because of its long experience coordinating activities of its member states. A body with experience in and capacity for coordinating regional processes will be selected to implement the proposed project.

- *Building effective partnerships with relevant organizations, industry, and governments of non-beneficiary countries can help significantly improve project design and implementation.* The West Indian Ocean Islands Oil Spill Contingency Planning Project involved the IMO, the oil and shipping industries (both local and international companies), and France (Réunion) as partners in designing and implementing the project, which contributed to its success. Similarly, the IMO, the oil and shipping industries, and France (Réunion) have been participating in designing the proposed project, offering insights of experience and expertise. The involvement of these entities in design is also leading to definition of their roles and responsibilities during project implementation.

- *Pairing weaker countries with stronger ones in a regional project can help to quickly build the capacity of the weaker ones.* Mauritius, Seychelles, and South Africa have much greater capacity than the other participating states. Their involvement will help Comoros, Kenya, Madagascar, and Mozambique to catch up. Being part of a regional plan will provide a strong incentive for all states to build and maintain capacity, even during periods of political uncertainty.

- *Coordinating closely with other GEF-supported activities is critical to success.* The proposed project is designed as an integral part of the overall ecosystem approach to better manage the living resources and habitat of the Agulhas and Somali large marine ecosystems. While not a component of the Agulhas and Somali Large Marine Ecosystem Program, it complements the activities of three projects that are (the Addressing Land-based Activities in the Western Indian Ocean Program (WIO-LaB), the Southwest Indian Ocean Fisheries Project (SWIOFP), and the Western Indian Ocean Large Marine Ecosystem Project (WIO MEP)), in contributing to the objective of the overall program: to assess the large marine ecosystem through transboundary diagnostic analyses and the preparation of strategic action programs. For example, it contributes to this assessment by producing electronic nautical charts, publications, and ecosystem sensitivity maps that incorporate scientific information on ecosystem and fishery conditions generated through the UNDP-executed WIO MEP and the World Bank-executed SWIOFP. In turn, the proposed project will project trajectories of oil spills and estimate the potential impact on fisheries of oil spills, enriching the overall knowledge base required for preparation of the

strategic action programs. The project team is also collaborating closely with the team preparing the World Bank-executed SWIOFP to ensure that both projects fully benefit from potential synergies. For example, observers of fishing activities can be placed on the oil tankers and other ships that use the marine highway. The teams are also working together to identify the most effective ways of using the advanced technology for monitoring, control, and surveillance of fishing activities. Thus, the proposed project can help to complement and increase the cost-effectiveness of the projects implemented under the programmatic umbrella for better managing the living resources and habitat of shared marine ecosystems.

In contributing to the objectives of the Agulhas and Somali Large Marine Ecosystem Program, the proposed project will also coordinate with the Tanzania Marine and Coastal Environmental Management Project to ensure that the newly-established Tanzania Deep Sea Fishing Authority participates in testing the marine highway as a tool to monitor the activities of large fishing vessels and in assessing its feasibility and benefits. The project will coordinate with the IMO/GEF/UNDP Global Ballast Water Management Program, which seeks to assist developing countries to implement effective measures to control the introduction of foreign marine species.[5] Finally, the project will potentially benefit from the knowledge generated through the GEF-supported Targeted Research Project on Coral Reefs on effective measures to restore coral reefs that have been damaged by spills of oil or chemicals. To avoid duplication of studies and analytical work, the proposed project will build on activities and results from related projects as they become available and will limit studies, mapping and information collecting to the specific needs of the project. The approach of the proposed project is expected to be useful in the efforts to improve the management of the large marine ecosystems of the western African coast, such as the Benguela current which runs up the west coast of South Africa. Subcomponent D3 provides funding for collaboration of the related GEF-supported projects.

6. Alternatives considered and reasons for rejection

Project alternatives considered during preparation include:

- *Developing a project involving just the Indian Ocean island states.* This was rejected because the coastal states of Kenya, Mozambique, South Africa, and Tanzania asked to be included in the regional contingency plan to address oil and chemical spills. Their participation will considerably strengthen the regional plan and therefore the capacity of countries to prevent and respond to an oil or chemical spill emergency. Their participation is also critical to the objective of creating a marine navigation system that ships can rely on using a single set of equipment, thus reducing costs and complexities for ship owners.

- *Developing a project focusing only on oil and chemical spill contingency planning.* This was rejected in favor of a more comprehensive approach involving activities to *prevent* emergencies in addition to responding to them.

[5] The full title of the project is Removal of Barriers to the Effective Implementation of Ballast Water Control and Management Measures in Developing Countries.

- *Addressing only the environmental concerns arising from the transportation of oil and chemicals.* This was rejected in favor of exploring the use of the marine highway to control unsustainable exploitation of marine and coastal resources, a serious and growing problem in the southwest Indian Ocean.

C. IMPLEMENTATION

1. Partnership arrangements (if applicable)

The project will be implemented in partnership with multilateral organizations, with industry groups representing both the shipping and oil industries, and with donors. Specialized international organizations—including IALA, IHO, IMO, UKHO, and SHOM—will be close partners in preventing marine contamination and in developing the national and the regional oil spill response contingency plans. UNEP through its Regional Seas Program will be a partner in protecting critical habitats and biodiversity. UNDP will be a partner in assessing risks to the ecosystem of the western Indian Ocean. The oil and shipping industries will provide expert advice and technical support to the project. France will participate as a partner through La Réunion island. Both the EC and Norway will provide support for project activities (see annex 19).

2. Institutional and implementation arrangements

Project implementation period. The project will be implemented during fiscal 2007–11, completed by December 31, 2010 and closed by June 30, 2011.

Executing agencies. Given the technical nature of some aspects of the project and the large number of countries involved, a regional project management unit will be established headed by a regional coordinator based at SAMSA. This will be responsible for implementing component A (development of a regional marine highway), for part of component D (D1, port state control and part of D4, project coordination and management), and for overall coordination of project implementation. SAMSA will also be accountable for ensuring that financial reporting and auditing requirements are met and that World Bank procurement, disbursement, and financial management policies and procedures are complied with. A subregional project management unit will also be established at the IOC to implement project components B (capacity building for prevention of marine and coastal contamination), C (building oil and chemical spill response capacity), and part of component D (D2, support for monitoring of fisheries activities, D3, coordination with other related GEF-supported projects and part of D4, projection coordination and management). National project coordinators from the ministry of transport or the ministry of environment of each country will coordinate implementation of the national-level activities and all beneficiary agencies.

Project oversight. A steering committee—comprised of senior officials responsible for transport or the environment or both of each of the beneficiary countries, the chief executive officer of SAMSA, the secretary general of the IOC—will be responsible for the overall monitoring of project implementation. The IMO, IALA, IHO, the Nairobi Convention secretariat, and the

secretariat of the New Partnership for Africa's Development will participate as observers. The steering committee will meet as required, but at least once a year.

Procurement. Works, consultants and equipment to be financed under the GEF grant will be procured according to World Bank procurement guidelines dated May 2004.

Accounting, financial reporting and auditing arrangements. SAMSA and the IOC will establish project accounting systems tracking the cost of the various goods and services provided under the project, according to the most recent World Bank Financial Management Guidelines published by the World Bank. Auditing will be carried out by independent auditors acceptable to the Bank, and the results of such audits will be submitted to the Bank no later than six months after the end of the fiscal year of SAMSA.

Supervision. The Bank will devote some 100 staff weeks to supervise progress under the GEF grant through fiscal 2011. Supervision will focus on progress in achieving specific objectives, such as establishing the marine highway, ratification of conventions, development of the national and regional contingency plans, development of capacity for port state control progress with activities related to monitoring of fisheries activities, coordination of related GEF-supported projects, procurement, financial management, and overall project implementation. During supervision and project reviews, particular attention will be paid to implementation of the mechanisms designed to promote institutional and financial sustainability.

3. Monitoring and evaluation of outcomes/results

To track progress towards the desired outcomes, the SAMSA and the IOC will regularly monitor a set of intermediate results indicators in accordance with the results framework specified in annex 3 of the Bank's Project Appraisal Document. This results framework names the key output and outcome indicators, annual targets, baseline situation, source of data, frequency of data collection, and entity responsible for collecting and reporting the data. The national project coordinators will produce quarterly reports describing progress in implementing the components for which they are responsible and noting trends in key performance indicators where information is available. They will in addition produce semiannual reports, commencing six months after project effectiveness, summarizing the progress achieved during the previous six months and submit them to the Bank within one month thereafter. Project managers will pay close attention to the information contained in the progress reports to quickly identify and address challenges to implementation. Monitoring reports will also be shared with all project stakeholders, including government officials, and will serve as key inputs to project planning and strategic exercises and to steering committee meetings. SAMSA will monitor implementation of the overall project through quarterly financial management reports and annual technical audits (Project Appraisal Document, annex 7). The project will support under component D development of the project monitoring system and creation of capacity for monitoring as needed within the SAMSA and the IOC.

Midterm review and implementation completion report. A midterm review will be carried out no later than June 2009 by the Bank, together with SAMSA and the IOC and the other involved parties. In addition to covering all areas included in annual reviews, the midterm review will

focus on the project's institutional and financial arrangements, the monitoring and evaluation system, and progress with implementation of all aspects of the project. The midterm review is also expected to thoroughly review and assess the institutional and financial sustainability action plans of each beneficiary country and to lay out the options for institutional and financial sustainability of the project's regional aspects. Finally, it will recommend measures to reorient the project if needed to ensure that it achieves its objectives. Prior to the midterm review, SAMSA and the IOC will contract a consultant (under GEF finance) to review and assess the progress of project implementation and prepare the necessary documentation for the review. No later than four months after the project closing date, SAMSA with input from the IOC will prepare and provide to the Bank a report on the execution of the project, its costs and the current and future benefits to be derived from it to be used in the preparation of the Bank's implementation completion report.

4. Sustainability and replicability

Sustainability. Participating governments are required to commit by midterm review to establishing mechanisms to sustain the marine highway, the environmental information systems, and the national and regional contingency plans and other project investments to ensure that the benefits of the project are sustained. The PDF Block B grant has financed a study of options for institutional and financial sustainability, which will be updated prior to midterm review. Similar mechanisms were established successfully under the West Indian Ocean Islands Oil Spill Contingency Planning Project, following the recommendations of an institutional and financial sustainability study. In addition, it is expected that countries will generate some income by selling the updated nautical charts and publications to the shipping industry.

Replicability. The proposed project will create a pilot marine highway, which if successful, is expected to be a model for replication in the southwest Indian Ocean region and in other sea lanes of the world. Three proposed GEF-supported projects—the Malacca Straits Marine Electronic Highway Demonstration Project, and the Yemen Coastal and Marine Management Project (that will informally extend the marine highway through the Gulf of Aden), and the Northern African Marine Highway—will in particular benefit from the lessons learned from the western Indian Ocean project. As with the Western Indian Ocean Islands Oil Spill Contingency Planning Project, the project management units will actively disseminate project lessons through a variety of means. These will include maintaining websites with up-to-date information on project experiences, producing films for broadcast on television or distribution through DVD, publishing newsletters for distribution to the public, inviting government ministers and other officials to key project events and inviting the press to cover such events, hosting study visits of policymakers and others interested in learning more, and contributing to relevant international conferences. The project management units will also create information packets targeted to specific stakeholders, such as policy makers, local fishers, ship operators, port and oil industry decisionmakers, and the like. Knowledge of new techniques to prevent and deal with oil spills will be continuously updated and shared among the participating countries. Similarly, best practices regarding the safety of navigation; monitoring of the state of fisheries, coral reefs, and ecosystem health; and managing and protecting resources will be shared through appropriate forums. Monitoring and evaluation reports will be regularly distributed to participating government agencies. Should a marine highway prove to be feasible for the region, government

officials and other interested parties from other regions will be invited to visit the project area and learn about the project first hand through discussions with SAMSA, with government officials, and with ship operators who are using the navigational aids.

5. Critical risks and possible controversial aspects

	Risks	Risk Mitigation Measures	Risk rating with mitigation
To project development objective	Ship owners and operators lack interest in financing and using the technology underpinning the marine highway.	A pilot will be installed in a limited area and its feasibility for expansion assessed. Measures to encourage the use the marine highway (such as requiring major compensation for environmental damages from vessels not using it) will be identified as part of the evaluation of the demonstration phase.	S
	Governments are unwilling to provide resources to finance operations and maintenance of the infrastructure created under the project.	The PDF Block B grant has financed a study identifying financing options for countries. Commitment to a source of funding will be made at midterm review.	S
	No regional center is identified and funded to coordinate national and regional efforts to prevent and respond to oil and chemical spill emergencies.	Countries' agreement to identifying a regional body and a source of funding for its coordination activities will be reached by midterm review.	M
	Support of partners is not provided in agreed amounts or when expected.	The project has been designed to permit flexibility in the timing of contributions. Should any partner be unable to fulfill its commitments, the project implementers will seek support from an alternative source.	S
To component results	Countries are unable to implement national and regional activities in coordination with each other.	A regional and subregional bodies have been selected to implement the project. Adequate training and technical assistance will be provided. World Bank procurement and financial management specialists are available in nearly all participating countries and will support the implementers.	S
	Governments of Madagascar and Comoros are unable to reach agreement to join the existing regional memorandum of understanding on port state control. Parties to the agreement lack the capacity to effectively implement it.	The project will finance consultations, high-level workshops, and expertise in cooperation with existing regional and international institutions to help governments understand the benefits of port state control, reach agreement, and strengthen the national capacity for enforcing its provisions.	S
Overall risk rating			**S**

Risk Rating - H (High Risk), S (Substantial Risk), M (Modest Risk), N (Negligible or Low Risk)

6. Loan/credit conditions and covenants

Prior to negotiations

- Complete.

During negotiations

- Complete.

Conditions of effectiveness

- Tripartite agreement signed.
- Regional coordinator and subregional coordinator recruited.

Dated covenants

- Appoint external auditors within three months of effectiveness.

D. APPRAISAL SUMMARY

1. Economic and financial analyses

Economic analysis. The economic benefits from the project will derive from three main sources. First, the marine highway once established will lower the costs of shipping by reducing the risk of accidents and by allowing ships to operate in storms and other adverse conditions that would idle them if they relied on conventional navigational systems. It may also generate value for the fishing industry by contributing to improved protection of fish stocks. Second, the expansion of the regional oil and chemical spill contingency plan, the development of national plans for the countries of continental Africa, and improved port state control will reduce the risks of catastrophic environmental and property damage and loss of life from oil and chemical spills, which should be reflected in reduced insurance costs. Third, the improved environmental information systems will help policy makers to better manage natural resources. Quantification of the costs and benefits of the project is not possible at this time. The proposed project will support the installation of a demonstration marine highway, and neither the costs nor the benefits of a future investment can be assessed without the information to be generated through the project.

Financial analysis. The project will have limited if any fiscal implications for participating countries. Ship owners are expected to bear some of the costs for maintaining and operating the marine highway through user fees, because they will benefit directly from the improved navigational services. Countries will agree by midterm review to identify sources of financing to sustain capacity for national and regional oil spill response, environmental information systems, and the like. Countries that are signatories to the CLC92 and the FUND92 conventions have a strong incentive to maintain oil spill response capacity once created. These conventions entitle signatories to compensation for damage arising from oil spills, but only if countries have

maintained adequate capacity to respond to an oil spill and limit its damage. The experience of the countries participating in the Western Indian Ocean Islands Oil Spill Contingency Planning Project demonstrates that the resources required in any case are not substantial. Mauritius, which maintains a relatively high level of capacity to respond to oil spills as it seeks to become a transshipment port for the region, is allocating less than US$35,000 per year for this purpose.

The study identifying sustainable institutional and financial arrangements will be updated prior to midterm review. With project support, countries will prepare and agree to action plans, and implement the recommendations of the study during project implementation.

2. Technical

The technology for the marine highway has been chosen to take advantage of advances in technology that improve the navigational decision making of mariners and reduce the costs to levels that make their use feasible in even poor regions. It involves an integrated system of electronic nautical charts, continuous real-time positioning information, information on environmental assets (reefs, nurseries, migration areas, and the like) where possible, aids to navigation and shore-based automatic ship identification system, transponders, and provision of real-time meteorological, oceanographic, and navigational information. Shipmasters use the information to guide their ships safely around environmentally sensitive areas and through busy shipping lanes. Shore-based authorities use the information to precisely identify and track ships. The marine highway is thus a valuable tool for preventing and controlling marine pollution and ensuring the safety of navigation. It may also prove to be a valuable tool for monitoring fishing activities. The technologies for the oil spill contingency planning and for the environmental information systems have been chosen because they are state of the art.

3. Fiduciary

The financial management arrangements in place at both SAMSA and the IOC meet the Bank's minimum requirements for successful project execution. Overall project financial management risk is assessed as negligible to moderate. See annex 7 for the detailed financial management assessment of both SAMSA and the IOC.

4. Social

Key stakeholders have been involved in preparing the project. These include the ministries of transport and environment, port authorities, groups representing the oil shipping industry, groups representing navigation (International Hydrographic Bureau, International Hydrographic Organization, the UKHO, SHOM, and IALA), the IMO, local oil and shipping firms, groups representing the fishing industry, and development partners. Both the UNDP and the UNEP have been consulted to ensure that complementarities among relevant projects are used to maximum effect. The teams preparing two proposed GEF-supported projects aimed at improving the management of deep water fisheries—the Tanzania Marine and Coastal Environmental Management Project and the Southwest Indian Ocean Fisheries Project (SWIOFP)—have also been involved in discussions on possible ways the tools of the marine highway can be used effectively to monitor the activities of large fishing vessels. Local

communities in the countries developing capacity to respond to oil and chemical spills will be consulted during project implementation through meetings organized by community leaders.

The proposed project was discussed at a high-level seminar in December 2004 organized by SAMSA with participation of the various stakeholders to take stock of the risks as established by the risk assessment study, and to agree on the final project objectives, design, and implementation arrangements. Its recommendations have improved the project design.

The involvement of stakeholders in preparing the project provides a solid foundation for stakeholder participation during project implementation. Workshops will be held periodically with relevant stakeholders for purposes of training, knowledge sharing, and institution building. Annual project planning workshops will also be held with the participation of all key stakeholders to prepare the following year's work program, specifying the role and contribution of each of the stakeholders to the implementation of the project. Local communities will participate in designing information campaigns on the risks of oil spills and measures that could be taken to prevent them. This was done very effectively under the Western Indian Ocean Oil Spill Contingency Planning Project. A key output of the project is expected to be a strengthened regional institution which provides a permanent forum through which various stakeholders come together to discuss issues of common concern and coordinate their actions. Local oil and shipping companies and port authorities will be part of the national and regional contingency plans. A draft stakeholder involvement plan has been prepared and was finalized during negotiations.

5. Environment

The project will finance primarily the development of a marine highway, the development of regional capacity to respond to spills of oil, chemicals, hazardous materials, and noxious substances, support for the extension and implementation of the regional agreement for port state control, and support for monitoring of fisheries activities. Since the purpose of the project is to improve to reduce the risk of environmental damage from spills of contaminants, progress towards these goals will be monitored through the monitoring framework established for the project.

6. Safeguard policies

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP/GP 4.01)	[]	[X]
Natural Habitats (OP/BP 4.04)	[ ]	[X]
Pest Management (OP 4.09)	[ ]	[X]
Cultural Property (OPN 11.03, being revised as OP 4.11)	[ ]	[X]
Involuntary Resettlement (OP/BP 4.12)	[ ]	[X]
Indigenous Peoples (OD 4.20, being revised as OP 4.10)	[ ]	[X]
Forests (OP/BP 4.36)	[ ]	[X]

Safety of Dams (OP/BP 4.37)	[ ]	[X]
Projects in Disputed Areas (OP/BP/GP 7.60)*	[ ]	[X]
Projects on International Waterways (OP/BP/GP 7.50)	[ ]	[X]

No safeguard policies are triggered by this project.

The safeguard screening category is S2 (no safeguard issues).

The environmental screening category is C (no adverse environmental impact).

7. Policy Exceptions and Readiness

No policy exceptions are required for this project. The project has met the regional readiness criteria.

* By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims to the disputed areas.

Annex 1: Country and Sector or Program Background

Western Indian Ocean
GEF-Marine Highway and Coastal Contamination Prevention Project

Background

The western Indian Ocean region includes five coastal countries (Kenya, Mozambique, South Africa, Tanzania, and Somalia), one large island state (Madagascar), three small island states (Comoros, Mauritius and Seychelles), and the island territories of France in the southwest Indian Ocean (La Réunion). The region contains two of the world's 64 major large marine ecosystems, the Agulhas current and the Somali current. The Agulhas current flows south along the continental shelf of Mozambique and South Africa, and includes Comoros, Seychelles, La Réunion, Mauritius, and Madagascar. It pushes against the near-freezing waters of Antarctica before meeting the cold Benguela current off the Cape of Good Hope. The species and habitats of the Agulhas current are unique. The coastline harbors mangrove forests, unique parabolic sand dunes, coral reefs of high degrees of endemism and biodiversity, and beds of sea grass that provide food and habitat for seabird colonies, sea turtles, and numerous fish. The Somali current stretches along the coast of East Africa from Dar es Salaam in the south to just north of the island of Socotra off the coast of Yemen. It includes Somalia, Kenya, and Tanzania. About 5 percent of the world's fish catch comes from this large marine ecosystem, including the Indian oil sardine, mackerel, small tuna, pelagic shrimp, tunas, barracuda, kingfish, jacks, and several rare fish species.

Threats

The growing population and expanding urbanization and economic activity in the coastal zones coupled with virtually nonexistent management are increasingly placing marine and coastal resources under threat. The shipping lanes along the East African coast are among the busiest in the world, carrying over 30 percent of the world's crude oil supplies. At any given time, hundreds of oil tankers, many of them very large crude carriers, transport crude oil from the oilfields of the Persian Gulf and Indonesia to Europe and the Americas. Over 5,000 tanker voyages per year take place in the sensitive coastal waters of Comoros and Madagascar and along the coast of East Africa, passing in close proximity to the World Heritage site of Aldabra Atoll (Seychelles). Oil and gas exploration programs operating in the region add to the risks. A large oil spill could also severely harm the economies of Mozambique, South Africa, Tanzania, Kenya, and the small island developing states by damaging fishing grounds, beaches, and diving and deep-sea fishing areas; disrupting shipping; and shutting down activities that depend on seawater intake.

High winds and high seas are common in the region, raising the risk that ships will accidentally spill oil, chemicals, noxious liquid wastes, and other hazardous substances. Currently, slicks brought in from spills in the open ocean by coastal currents frequently mar beaches and damage coral reefs. Discharges of contaminated ballast water and from refineries add to the load.

Moreover, destruction of coral reefs and illegal fishing are major problems off the shores of the countries of the region. The western Indian Ocean region is one of the last regions in the world where fishing activities are largely unregulated. Vessels from Europe and eastern Asia heavily exploit tuna cape hake, blackhand sole, and other species within the exclusive economic zones, but land the catch outside the region, without reporting the catch to the national authorities. Improvements in fishing methods have led to greater numbers, larger sizes, and increased variety of fish being caught. As a consequence fish stocks are shrinking and several species face potential extinction.

Although the countries in the region have declared a 200-mile exclusive economic zone (UNCLOS), they lack the institutional and financial capacity to effectively monitor activities of vessels and to enforce their control over activities taking place within their jurisdictions. The lack of enforcement is contributing to the destruction of the coral reefs, to unsustainable exploitation of fisheries, and to significant damage to non-target species, such as sea tortoises, porpoises, dolphins, and whales.

Countries of the region recognize that they cannot protect their shared marine and coastal resources working alone. Rather they need to work together to improve the safety of navigation through regional waters and to enforce regulations intended to protect fishing and other marine resources from excessive exploitation. They also need assistance to pilot new technologies that have the potential of significantly improving the safety of navigation at reasonable cost, such as a marine highway. The project will help governments achieve their objectives by supporting creation of a mechanism of regional cooperation and by piloting a marine highway.

Current status of navigation systems, oil and chemical spill contingency planning, and port state control systems

Marine highway development. All the countries in the region maintain some navigational charts. These charts need to be updated. Similarly, all countries maintain some aids to navigation. These, too, are based on outmoded technology. As a result, ships take significant precautions to avoid colliding with one another or grounding on shoals whose locations are uncertain. Countries would like to upgrade to more reliable and modern aids to navigation systems in cooperation with the shipping industry, but will not likely be able to forge a regional agreement that would ensure all countries followed the same approach (which would lower costs to ships of installing equipment), or to be able to install a demonstration project to test its feasibility in the region.

Oil and chemical spill contingency planning. The island countries of the western Indian Ocean region are taking action to protect their marine and coastal ecosystems. Comoros, Madagascar, Mauritius, and Seychelles—with support of the GEF-financed Western Indian Ocean Oil Spill Contingency Planning Project—have prepared and tested national oil spill contingency plans and have established capacity within their ministries of environment robust capacity to respond to oil spill emergencies. They have also ratified key IMO conventions and translated their provisions into national legislation (see matrix). They have also entered into a regional oil spill contingency plan and established a subregional oil spill coordination center in Madagascar that is responsible

for coordinating periodic updating of the plan, regional exercises, and response to an actual emergency.

The coastal countries of southeastern Africa are also acting to safeguard their marine and coastal environments, although at different paces. Kenya has ratified the OPRC90. It prepared in July 2001 a national oil spill response contingency plan, and has capacity to address Tier 1 and Tier 2 oil spills. To coordinate response to oil spills, it has established the national oil spill response committee with representatives of the Kenya Ports Authority, the oil industry, the shipping industry, and bunkering services. The Kenya Ports Authority owns key oil spill response equipment, including a tug equipped with spraying equipment and a catamaran equipped with boom, spray arms, and several skimmers. Additional equipment is planned to be secured in the near future, with support of the local oil companies and the national authorities.

Port state control. Kenya, Mauritius, Mozambique, Seychelles, South Africa, and Tanzania are parties to the Indian Ocean Memorandum of Understanding for Port State Control signed on June 5, 1998. Only South Africa, however, has implemented a port state control system, which aims to verify whether foreign flag vessels calling at a port of state complies with applicable international conventions and with national laws. The other countries have yet to implement an inspection regime. SAMSA carried out 223 inspections in 2004/05. Mauritius carried out one inspection and the other countries carried out none. Comoros and Madagascar are not currently parties to the memorandum of understanding.

What remains to be done

Much more needs to be done to ensure that the varied habitats and rich biodiversity of the western Indian Ocean are appropriately managed and protected. Efforts now need to focus on *preventing* oil spills and ship accidents, as well as maintaining capacity to respond to them. Specifically:

National laws and regulations concerning the safety of navigation and prevention of pollution need to be coordinated across countries

While the countries bordering the western Indian Ocean engage in considerable trade with one another they have not coordinated their policies and laws to facilitate shipping and trade. Many countries have still not ratified key conventions designed to protect the marine environment from pollution accidents and to ensure the safety of navigation. South Africa has yet to ratify OPRC 90. Madagascar has not ratified COLREG 72. Comoros, Madagascar, Mauritius, Mozambique, and Tanzania have yet to ratify the London Convention 72. Comoros, Kenya, Madagascar, Mozambique, and Seychelles have not ratified the Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances (known as Intervention 69). Moreover, the countries that were not part of the West Indian Ocean Oil Spill Contingency Planning Project will need to translate the provisions of conventions that they ratify into local laws and regulations.

Countries of the region would benefit by joining together to adopt a harmonized system of port state control

Under a system of port state control authorities inspect foreign ships docking at their ports to ensure that they meet international safety and environmental standards, and that crew members have adequate living and working conditions. Countries in many regions of the world have forged regional agreements that commit members to inspecting ships according to international standards, detaining ships that fail to make required improvements, and to passing information on substandard ships to its next port of call. Substandard ships pose a hazard to other ships, crew, and marine environments because they may not be able to fix their positions accurately, be under the control of incompetent officers, carelessly or illegally dispose of waste oil and other materials, and fail to maintain proper records.

Navigation equipment and services need to be upgraded in some countries

The quality of navigation equipment and navigation services varies significantly from country to country. South Africa operates a relatively sophisticated navigation system, especially concerning shipping off the southern coast, a notoriously dangerous area for vessels. Other countries provide relatively rudimentary services. The existence of varying standards increases costs and risks to ships operating in the region.

Ecosystem benefits should be estimated

Parties to the FUND can collect compensation from ships that damage ecosystems from spills or accidents at sea. To use the compensation funds adequately and create incentives to encourage ships to actively prevent oil spills and other accidents, agreement on the compensation values for damage incurred is needed.

Information on risks needs to be developed

Too little is known on the risks of major pollution accidents in the region. Better information on risks would enable public and private stakeholders to focus limited resources on actions that would most cost-effectively reduce risks.

Matrix 1: Status of conventions by Country

	MARPOL 73/78				London Convention 72	Inter-vention 69	CLC			Fund			OPRC 90	SOLAS			COLREG 72
	Annex I/II	Annex III	Annex IV	Annex V			Conv 69	Prot 76	Prot 92	Conv 71	Prot 76	Prot 92		Conv 74	Prot 78	Prot 88	
Comoros	x	x	x	x					x			x	x	x	x		x
Kenya	x	x	x	x	x		d		x	d		x	x	x			x
Madagascar	x	x	x	x					x			x	x	x			
Mauritius	x	x	x	x		x	d	x	x	d	x	x	x	x		x	x
Mozambique	x	x	x	x			d		x	d		x	x	x			x
Seychelles	x				x		d		x	d		x	x	x	x	x	x
South Africa	x	x		x	x	x	x		x			x		x	x		x
Tanzania						x			x			x	x	x			x

Annex 2: Major Related Projects Financed by the Bank and/or Other Agencies

Sector issue	*Project*	*Latest supervision ratings (Bank/GEF-financed projects only)*	
		Implementation progress	Development objective
Bank/GEF financed			
General Marine/coastal pollution, biodiversity	Mozambique Coastal and Marine Biodiversity Project (35919, expected to close June 30, 2007)	MS	MS
Marine/coastal pollution, fisheries management	Tanzania Marine and Coastal Environment Fisheries (88967, approved in July 2005).		
Regional Protection of international waters	Western Indian Ocean Oil Spill Contingency Planning Project (36037, closed June 2004)	S	S
Protection of international waters	Malacca Straits Marine Electronic Highway Demonstration (68133, under preparation)		
Protection of international waters, fisheries management	Southwest Indian Ocean Fisheries Project (P072202, under preparation)		
Protection of international waters, fisheries management	Strategic Partnership for a Sustainable Fisheries Investment Fund in the Large Marine Ecosystems of Sub-Saharan Africa, Tranche 1 (87411, under preparation)		
Protection of regional marine resources	Indian Ocean Coral Reef Monitoring Network (closed July 2005) (implemented by the IOC)	S	S
Other agencies			
Protection of marine resources and regional environmental legislation	IOC Regional Environment Program		
Indian Ocean regional pollution	IOC Regional Action Project for Maritime Security		
Indian Ocean regional fisheries management	Regional Tuna Project (underway since 1985). Monitoring, inspection and surveillance, harmonizing legislation.		
Protection of International Waters	Inter-American Development Bank Environmental Protection and Maritime Transport Pollution Control in the Gulf of Honduras (under preparation)		
Protection of International Waters	UNDP Toward an Ecosystem Approach to the Sustainable Use of the Resources of the Agulhas and Somali Current Large Marine Ecosystem (under preparation)		
Protection of International Waters	IMO/GEF/UNDP Global Ballast Water Management Program		
Prevention and control of marine pollution, and safety of navigation.	IMO Integrated Technical Cooperation Program and other relevant IMO projects.		

Rating - S (Satisfactory), MS (Moderately satisfactory), U (Unsatisfactory)

Annex 3: Results Framework and Monitoring

Results Framework

Global Environmental Objective	Outcome Indicators (classified by GEF International Waters M&E indicator type)[6]	Use of Outcome Information
1. To ascertain the economic, technical, and institutional feasibility of introducing a marine highway in the region.	1. Modern aids to navigation systems installed and the feasibility of a marine highway for the region assessed with the full involvement of industry groups. Should the concept prove feasible, a plan for further development is put into place (Process indicator (PI)). 2. Action plan for monitoring of fisheries activities developed by midterm review, and some of its main recommendations implemented thereafter (PI).[7]	Years 1–5: SAMSA and IOC will monitor progress in implementing the project activities and work with country and regional-level implementers to understand and address problems. Year 3: Project will be revised, based on findings of the midterm review. Year 5: Results will be compared with baseline data (to be established prior to midterm review) to assess the feasibility of the marine highway.
2. To support widening the existing regional agreement (June 5, 1998) on port state control and implementation of its provisions.	2. Agreement reached with Madagascar and Comoros to join the regional agreement on port state control, signed on June 5, 1998 (PI).	
3. To reduce risks in Kenya, South Africa, Tanzania, and Mozambique of environmental damage to beaches, fishing grounds, and other domestic resources from spills of oil and chemicals.	3. Agreement reached by all eight states participating in the project on the arrangements for cooperation in cases of major pollution incidents (PI).	
Project Development Objective	**Outcome Indicators**	**Use of Outcome Information**
1. To increase the safety and efficiency of navigation.	1. Number of passages of vessels traveling through the region using the marine highway and its electronic charts for navigation (stress reduction indicator (SRI)). 2. Number of ship inspections carried out at major ports in the region (PI).	Years 1–5: SAMSA and IOC will monitor progress in implementing the project activities and work with country and regional-level implementers to understand and address problems. Year 3: Project will be revised, based on findings of the midterm review Year 5: Results will be compared with baseline data (to be established prior to midterm review) to assess the feasibility of the marine highway.

[6] PI: process indicator; SRI: stress reduction indicator; ESI: environmental stress indicator.

[7] The action plan and its recommendations will be developed under the project. Once the recommendations are known, the results framework will be updated to reflect them.

Intermediate Results One per Component	Results Indicators for Each Component (classified by GEF IW M&E indicator type)	Use of Results Monitoring
Component A: A demonstration marine highway is established and operated to demonstrate its feasibility for the region.	A.1. Nautical charts and publications produced, containing information on environmental assets where possible (PI). A.2. Charts and publications maintained and updated (PI). A.3. Main aids to navigation on the route of the marine highway surveyed and rehabilitated (PI). A.4. Automatic information service and communications system established (PI). A.5. Search and rescue communications between two maritime rescue coordination centers (Cape Town and Rèunion) and all states involved in the project fully operational (PI). A.6. Demonstration phase assessed (with authorities responsible for monitoring fisheries) and, if found feasible, second phase under preparation (PI).	Years 1–3: Failure to implement the activities according to the timeline may indicate a lack of capacity of the SAMSA to coordinate activities. Year 3: project will be revised, based on findings of the midterm review. Year 5: Results will be compared with baseline data (to be established prior to midterm review) to assess the feasibility of the marine highway.
Component B: Capacity for preventing and addressing coastal and marine contamination is strengthened.	B.1 Pollution prevention and contingency management plans developed for Kenya, Mozambique, and Tanzania (PI). B.2. Methodology to value ecosystem benefits developed and used by environmental managers (PI). B.3 Countries establish and continuously maintain databases and geographic information systems, as indicated in discussions with staff of project entities (PI).	Years 1–3: Failure to implement the activities according to the timeline may indicate problems of various kinds, which will be assessed and addressed. Year 3: project will be revised, based on findings of the midterm review. Year 5: Project outcomes will be assessed and problems addressed for phase two.
Component C: Capacity for regional oil and chemical spill response is created.	C.1. Kenya, Mozambique, South Africa, and Tanzania ratify relevant conventions, and pass laws and regulations to implement them (PI).[8] C.2 Kenya, Mozambique, and Tanzania adopt or enhance national oil spill contingency plans. South Africa tests its plan (PI). C.3 A regional marine pollution contingency plan that covers all participating countries is established (PI). C.4 A regional center to coordinate national actions and to monitor	Years 1–3: Failure to implement the activities according to the timeline may indicate problems of various kinds, which will be assessed and addressed. Year 3: project will be revised, based on findings of the midterm review. Year 5: Project outcomes will be assessed and problems addressed for phase two.

[8] The conventions to be ratified will be identified under the project. The results framework will be updated with details once the decisions have been made.

	regionwide environmental conditions is operating at the end of the project (PI).	
Component D: Port state control widened, fisheries monitoring supported, and mechanisms of cooperation among related GEF-supported initiatives strengthened.	D.1. Inspectors are trained to international standards in port state control (PI). D.2. Mechanisms for coordination among related GEF-supported initiatives are created and maintained (PI).	Years 1–3: Failure to implement the activities according to the timeline may indicate problems of various kinds, which will be assessed and addressed. Year 3: project will be revised, based on findings of the midterm review. Year 5: Project outcomes will be assessed and problems addressed for phase two.

Arrangements for results monitoring

		Target Values					Data Collection and Reporting		
Outcome Indicators	**Baseline**	**YR1/YR2**	**YR2**	**YR3**	**YR4**	**YR5**	**Frequency and Reports**	**Data Collection Instruments**	**Responsibility for Data Collection**
Global Environmental Objective									
1. Modern aids to navigation systems (forming the pilot marine highway) installed and the feasibility the approach for the region assessed with the full involvement of industry groups. Should the concept prove feasible, a plan for further development is put into place (PI).	No marine highway infrastructure in place.	Tenders called for.	Surveys completed.	Electronic nautical charts produced.	Pilot operational.	Evaluation complete. Plans for further development complete.	Progress with implementation reported quarterly.	Project implementation reports.	SAMSA
2. Action plan for monitoring of fisheries activities developed by midterm review, and some of its main recommendations implemented thereafter (PI).	No action plan yet developed.	Consultant recruited	Action plan completed.	TBD depending on action plan.	TBD depending on action plan.	TBD depending on action plan.	Quarterly.	Project implementation reports.	SAMSA
3. Agreement reached with Madagascar and Comoros to join the regional agreement on port state control that was signed on June 5, 1998 (PI).	Madagascar and Comoros not currently part of the regional agreement.					Complete	Annually	Revised memorandum of understanding for port state control.	SAMSA
4. Agreement reached by all eight states participating in the project on the arrangements for cooperation in cases of major pollution incidents (PI).	Agreement currently exists between the island states.	Training.	National contingency planning complete.	Draft regional agreement.	Regional coordination center established.	Assessment	Annually, once the regional institute has been identified.	Feedback from government entities.	SAMSA and IOC
Project Development Objective									

1. Number of passages of vessels traveling through the region using the marine highway and its electronic charts for navigation (SRI).	No marine highway infrastructure in place, so no ships use it.	Tenders called for.	Surveys com-pleted.	Electronic nautical charts prod-uced.	Pilot opera-tional.	Evaluation complete. Plans for further develop-ment complete.	Annually or semiannually, once the demonstration project is in place.	Assessment of feasibility for scaling up the demonstration marine highway.	SAMSA
2. Number of ship inspections carried out at major ports in the region (PI).	223 in 2004–05	275	325	375	425	475	Annually	Indian Ocean memorandum of understanding reporting system.	SAMSA
Results Indicators for Each Component									
A.1. Electronic nautical charts and publications produced.	0	0	0	15	10	10	Quarterly	Interviews with relevant national authorities.	SAMSA
A.2. Charts and publications maintained and updated (cumulative).	0	0	0	15	25	35	Quarterly	Interviews with relevant national authorities.	SAMSA
A.3. Main aids to navigation on the route of the marine highway surveyed and rehabilitated.	0	0	0	5	0	0	Quarterly	Interviews with relevant national authorities.	SAMSA
A.4. Automatic information service and ship communications system established.	0	0	0	0	3	1	Quarterly	Interviews with relevant national authorities.	SAMSA
A.5. Search and rescue communications between two maritime rescue coordination centers (Cape Town and Réunion) and all states involved in the project fully operational (PI).	Communications links not yet fully established with the participating states.	Assess-ment.	Tenders called.	Links estab-lished.	Links estab-lished.	Links estab-lished.	Semi-annually	Interviews with officials of the rescue coordination centers.	SAMSA
A.6. Demonstration phase assessed and, if found feasible, second phase prepared.	No marine highway infrastructure in place.	See number 1 under project develop-ment objectives.	See number 1 under project develop-ment	See number 1 under project develop-ment	See number 1 under project develop-ment objectives.	Evaluation completed . Plans for further develop-	End of project.	Project implementation reports.	SAMSA

			objectives	objectives		ment complete.			
B.1. Pollution prevention and contingency management plans developed for Kenya, Mozambique, and Tanzania (PI).	None currently in place.	0	0	3, 1 for each country	0	0	Annually	Interviews with relevant national authorities.	IOC
B.2 Methodology to value ecosystem benefits developed and used by environmental managers (PI).	None currently in place.	Complete	0	0	0	0	Annually	Interviews with relevant national authorities.	IOC
B.3 Countries establish and continuously maintain databases and geographic information systems, as indicated in discussions with staff of project entities (PI).	None currently in place.	0	0	Database for one country in place	TBD, depending on financing and on EC taking over	TBD, depending on financing and on EC taking over	Annually	Interviews with relevant national authorities.	IOC
C.1 Kenya, Mozambique, and Tanzania pass national laws and regulations to implement OPCR, FUND, and CLC conventions. Additional conventions to be ratified will be identified under the project.[9]	Kenya, Mozambique, and Tanzania have ratified OPRC 90, CLC (Prot 92), and Fund (Prot 92), but have not passed national laws and regulations to implement them.	Training. Drafting begins.	Training. Laws and regula-tions passed.	Complete	Complete	Complete	Annually	Interviews with national authorities for national laws and regulations.	IOC
C.2 Kenya, Mozambique, and Tanzania adopt national oil spill contingency plans.	Plans in different stages developed.	Activities to be deter-mined through project.	Activities to be deter-mined through project.	Complete	Complete	Complete	Annually	Interviews with relevant national authorities.	IOC
C.3 Equipment in place and used in training.	Some equipment in place.	Assessment and specifi-cation.		Equip-ment in place	Training	Complete	Annually	Interviews with relevant national authorities.	IOC
C.4a A regional marine pollution contingency plan	Neither Kenya, Mozambique,				Complete	Complete	Annually	Interviews with relevant national	IOC

[9] To be updated with information on additional conventions countries decide to ratify with support from the project.

that covers all participating countries is established.	Tanzania, South Africa not currently in a regional plan.							authorities.	
C.4b A regional center to coordinate national actions and to monitor regionwide environmental conditions is fully operating by the end of the project.	A subregional center is currently operating in Madagascar.	Plans and timetable for a regional center developed.	Agree-ment reached on arrange-ments.	Progress is made to establish the center in accord-ance with the time-table.	Progress is made to establish the center in accord-ance with the time-table.	Center is operating.	Annually	Interviews with relevant national authorities.	SAMSA and IOC
D.1. Agreement reached with Madagascar and Comoros to join the regional agreement on port state control that was signed on June 5, 1998.	Madagascar and Comoros not currently part of the regional agreement.					Complete	Annually	Revised memorandum of understanding for port state control.	SAMSA
D.2. Inspectors trained under the project to international standards in port state control operating.	16 inspectors currently operating in South Africa.	TBD under the project.	TBD under the project.	TBD under the project.	TBD under the project.	TBD under the project.	Annually	Interviews with relevant national authorities.	SAMSA and IOC
D.3. Mechanisms for coordination among related GEF-supported initiatives created and maintained.	No mechanisms are yet in place.	Information on project updated regularly on websites of IW-Learn, IOC, and SAMSA.	Staff of project mgt units of GEF projects partici-pate in regional workshop	Staff of project mgt units of related GEF projects partici-pate in midterm review.	Staff of project mgt units of GEF projects participate in GEF-IW conferences.	Staff of project mgt units of GEF projects participate in GEF-IW confer-ences.	Semiannually	Interviews with relevant national authorities, website observations, .	SAMSA and IOC

Annex 4: Detailed Project Description

Western Indian Ocean
GEF-Marine Highway and Coastal Contamination Prevention Project

The project will include Kenya, Mozambique, South Africa, Tanzania, Madagascar, Comoros, Mauritius and Seychelles, and as a partner La Réunion (France), covering a combined coastline of 13,300 kilometers.

Similar to the model developed for the proposed GEF-supported marine electronic highway project for the Straits of Malacca and Singapore, the development of the western Indian Ocean marine highway will be implemented in phases. The first phase of the project will establish as a pilot a marine highway with electronic support for a limited area of the region's major shipping routes, will assess the feasibility of the concept, and, should the concept prove viable, will finance preparation of a follow-up project agreed upon by the countries. The second phase of the project (five years or so after the start of project preparation) will build on the experience of the first phase and establish a full marine highway covering all major shipping routes of the western Indian Ocean region.

The precise components, activities, and implementation arrangements of the project have been defined through a study undertaken with support from a GEF/PDF Block B Grant, which was requested in July 2003, approved in November 2003 and made effective in July 2004 after signing of the agreement by all beneficiary countries. GEF funds will complement assistance provided through the other partners in the program, and will finance only activities that contribute to global environmental benefits. Specifically, GEF funds will finance activities designed to prevent marine and coastal contamination activities and activities that support surveillance and enforcement of laws and regulation governing the shipping and fisheries industries. This includes development and installation of a pilot marine highway. The oil spill contingency planning activities are largely baseline activities, and the GEF will allocate limited funding for these, focusing on the activities designed to create the regional plan and strengthen regional collaboration.

All data collection, studies, and research planned under the proposed Western Indian Ocean Marine Highway Development and Coastal and Marine Contamination Prevention Project are targeted and specific to the project and will not duplicate activities which are planned under other GEF-funded initiatives under the programmatic umbrella for the western Indian Ocean. The proposed project will not, for example, support development and implementation of a fisheries management plan, undertake a broader resource assessment of the large marine ecosystem, study human impact on coral reefs, or the like.

Components include:

Component A: Development of a regional marine highway and institutions—US$12.6 million (of which GEF financing is US$6.0 million)[10]

A marine highway takes advantage of advances in technology that improve the navigational decision making of mariners. It involves an integrated system of electronic nautical charts, continuous real-time positioning information, aids to navigation and shore-based automatic ship identification system, transponders, and provision of real-time meteorological, oceanographic, environmental, weather, and navigational information. Shipmasters use the information to navigate their ships safely through busy shipping lanes. Shore-based authorities use the information to precisely identify and track ships. The marine highway is thus a valuable tool for preventing and controlling marine pollution, monitoring and controlling ship movements in and around environmentally sensitive areas, and ensuring the safety of navigation. Technology and equipment of the marine highway may potentially also be used as a valuable tool for monitoring fishing activities. A marine highway lowers costs of shipping by reducing the risk of accidents and by allowing ships to operate in storms and other adverse conditions that would idle them if they relied on conventional navigational systems.

The concept of a marine highway was initiated in Canada in the early 1990s with the application of digital technology to navigation, particularly in the development of electronic navigational charts and the electronic chart display and information system (ECDIS). The core of the Canadian version of the marine highway was the integration and interconnection of the ECDIS and the automatic identification system with powerful shore-based databases to provide a basis for optimizing management of shipping traffic. The ECDIS has been operating in the Great Lakes and the St. Lawrence River corridor since 1995 with considerable success, helping ships to navigate through treacherous waters even in conditions of low visibility. The pioneering efforts in Canada on digital navigation had led to the widespread adoption of electronic navigational charts and the ECDIS by the world's shipping industry, accelerating the commercial development of electronic maritime technology along with international technology standards.

More important than technology, the marine highway requires institutional mechanisms that bring governments and public and private actors together to cooperate and coordinate their actions. It also involves financial, legal, and institutional arrangements that ensure it is managed, operated, and updated efficiently and effectively.

The first phase of the project will involve the establishment of a network of electronic navigational charts incorporating where possible information on environmental assets (reefs, nurseries, migration areas, and the like) in conjunction with the differential global positioning system and other maritime technologies, which will form the backbone of a marine highway. As the area between these points is in deep water and is far from the coasts, the area will be surveyed and electronic nautical charts will be produced and provided to vessels. Specifically, a deep-water route used by international shipping and in particular oil-laden tankers will be surveyed from south of Inhambane to north of Nacala—a distance of about 1,000 nautical miles. Two lanes of 5 nautical miles wide with a 10 nautical miles buffer strip will be surveyed and

[10] Due to rounding the GEF figures above equal US$11.1, however the total GEF amount is **US$11.0 million**

electronic nautical charts of the route provided. The route will be surveyed to a width of 25 nautical miles utilizing the Mozambican vessel Bazzaruta on which will be fitted the appropriate multi-beam surveying equipment. Training of the Mozambican hydrographers on this equipment will be included. It is anticipated that this survey should take about 60 days. The project will support the production of electronic nautical charts of the approaches and the ports of ports and the area around the Comoros and of the approaches and the area around Aldabra.

The component includes six subcomponents: (1) production of nautical charts and publications incorporating information on environmental assets; (2) maintenance of these charts and publications; (3) survey and rehabilitation of the main aids to navigation on the route of the marine highway; (4) establishment of an automatic information service; (5) support to search and rescue activities; and finally (6) the evaluation of the demonstration phase and preparation of the second phase if the demonstration phase proves to be feasible and sufficiently beneficial to justify costs.

It is expected that the large vessels transporting oil and chemicals will choose to use the marine highway, rather than sail outside its boundaries, because doing so will reduce their risks of groundings and collisions and increase their efficiency of navigation. The technology of the marine highway is expected to assist fishing authorities with monitoring, control, and surveillance of large fishing vessels. All countries of the region either already require or are planning to require fishing vessels that operate in their territorial waters to install and operate an automated satellite-linked vessel monitoring system on their ships. Vessel monitoring systems provide information to the fishing authorities on the location of a vessel, speed, and course of a vessel. They allow the authorities to check whether the vessel operates where fishing is not allowed, holds the necessary licenses and quotas to fish in the area, or has sailed to a port without declaring its landings. The proposed project will collaborate with the national fishing authorities to ensure that the technology of the marine highway is as useful as possible to monitor and control fishing activities. Where fishing boats are not already using a vessel monitoring system, mechanisms to hasten their adoption—such as requiring them to install the necessary equipment on their boats in exchange for a license—will be explored with the fishing authorities. The evaluation of the demonstration project will also involve the fishing authorities.

Specific activities include:

(1) GENERATING NAUTICAL CHARTS AND PUBLICATIONS. The major routes used by vessels will be surveyed using swathe bathymetry equipment to identify potential dangers on the routes and to provide data to be used to produce both paper and digital charts. In addition, the approaches to and sites of some five ports (one in Mozambique, one in Kenya, two in Tanzania, and one in Madagascar), the area around Comoros and the area around Aldabra will be surveyed and the relevant paper and digital charts produced and regularly updated. The charts and publications will include information on the environmental conditions and biological resources of the region's waters, including nurseries, major fish migration routes, and environmentally-sensitive areas.

(2) MAINTAINING CHARTS AND PUBLICATIONS. The project will support investment in infrastructure and training to enable countries to gather data, and produce and maintain

electronic nautical charts where sufficient data are available. Experts in surveying and the production of charts will provide training in managing and maintaining the information necessary to ensure the safety of navigation and environmental protection and will assist in the establishment of the necessary infrastructure to maintain these services once the project is complete. Special attention will be taken to ensure that information on fish stocks and other biological resources is incorporated into the charts and publications.

(3) INSTALLING AIDS TO NAVIGATION. Surveys of hazards and assessments of the status of the lights and buoys will be carried out in along all the major shipping routes, with particular emphasis on the route to be used for the demonstration phase of the marine highway. In addition, aids to navigation will be installed to guide ships traveling through the waters of the western Indian Ocean and entering ports and harbors. GEF financing of US$1.1 million will support installation of the aids to navigation.

(4) INSTALLING AUTOMATIC INFORMATION SYSTEMS WITH MF/HF/VHF COMMUNICATION. The project will support the installation of six shore-based automatic information systems (several in South Africa (including Durban), one in Inhambane, one in Nacala, and one in Grand Comoros. Should a comparable satellite automatic information system become available while the project is being implemented, the benefits of this system compared with that of terrestrial stations will be evaluated. This subcomponent will support installation of equipment (financed by the industry) on ships taking part in the demonstration project, which together will form the basis of a ship reporting scheme. The subcomponent will also support training in the operation and maintenance of the systems. The installations will be used to transmit real time information on hydrographical and oceanographic, environmental, weather conditions, and the positions and movements of ships in the area. They will form the foundation of a marine highway that will fully integrate information required for marine safety and environmental protection and management, including management of fisheries.

(5) SUPPORT FOR SEARCH AND RESCUE OPERATIONS. This subcomponent will support the installation of telecommunication links between the marine rescue coordination centers in South Africa and Réunion.

(6) EVALUATING THE PILOT PHASE AND PREPARING THE NEXT PHASE. This subcomponent will finance a detailed assessment of the pilot phase and draw lessons for use in designing and rolling out the second phase of the marine highway development. The evaluation of the demonstration project will include an in-depth study of the costs and benefits to large fishing vessels of using a marine highway, and will specify a range of regulatory and other measures that would encourage such vessels to use it. This subcomponent will also finance the detailed preparation of the second phase of the marine highway development.

The GEF will finance each of these subcomponents, with resources focused in particular on producing the nautical charts and publications, and on evaluating the demonstration phase and preparing the second phase. IHO and IALA will support the project by providing training and technical advice, as this complements their strategic plans. The UKHO and SHOM, with international and regional charting

responsibilities, will assist with the production of electronic nautical charts in the region. Norway will assist with carrying out the project's hydrographic surveys.

Component B: Capacity building for prevention of coastal and marine contamination—US$4.3 million (of which GEF financing is US$1.1 million)[11]

Subcomponents include:

(1) SENSITIZATION ON ISSUES RELATED TO MARINE AND COASTAL PROTECTION. This subcomponent will support seminars and workshops on environmental sensitivity mapping, project management, issues related to implementation of conventions, marine navigation safety, prevention of marine and coastal pollution, development and implementation of national contingency plans, use of oil spill equipment, characteristics and effects of oil in the marine environment, risk assessment and development of appropriate response strategies. It will also finance the participation of government officials at major international seminars on the safety of marine navigation, prevention of ship-based pollution, enforcing fisheries regulations, and related matters. It will support experts to test an oil spill response manual. Finally, it will support the training of trainers.

(2) CREATING POLLUTION PREVENTION AND CONTINGENCY MANAGEMENT PLANS FOR COASTAL AND MARINE BIODIVERSITY HOTPOTS WITH HIGH RISK PROFILES. Sensitivity maps in combination with the risk assessment will be used to identify coastal and marine biodiversity hotspots which are at high risk of pollution and damage from shipping accidents. Site-specific and issue-related pollution prevention and contingency management plans will be developed for these sites. Local communities, private businesses, and other key stakeholders will participate actively in developing these plans to ensure that they reflect the preferences and values of the people who will implement them.

(3) DEVELOPING A METHODOLOGY TO VALUE ECOSYSTEM BENEFITS. This subcomponent will support the development of a methodology to enable governments to carry out baseline studies to identify the key environmental resources of the region and assign indicative values to the resources. Important resources include coral reefs, calving areas of marine mammals, nurseries of various fish species, and the like. The methodology will draw on information on biological resources generated through the UNDP-executed Western Indian Ocean Large Marine Ecosystem Project (WIO MEP) and the World Bank-executed Southwest Indian Ocean Fisheries Project (SWIOFP). Those projects in turn will benefit from the methodology in developing the strategic action programs.

(4) DEVELOPING A REGIONAL DATABASE AND GEOGRAPHIC INFORMATION SYSTEM ON MARINE AND COASTAL RESOURCES. The project will finance the development of a regional database and geographic information system on the marine environment, marine and coastal resources, ship movements, ship waste, and sea-based activities. Activities will include collection of baseline data where necessary. The information, together with that

[11] Due to rounding the GEF figures above equal US$11.1, however the total GEF amount is **US$11.0 million**

generated under the WIO MEP and the SWIOFP, will be used to create sensitivity maps indicating coastal and marine resources and their economic values and sea-based sources of marine pollution. The database will be useful in developing the strategic action programs for the Agulhas and Somali large marine ecosystems.

The GEF will contribute to financing each of these subcomponents. GEF funds in particular will support the development of a methodology to value ecosystem benefits and the development of a regional database and geographical information system on marine and coastal resources. The IMO, the EC, and France have committed to support, contribute to, or cofinance the preparation of the national oil spill contingency plans.

Component C: Building a regional oil spill response capacity—US$4.4 million (of which GEF financing is US$ 0.7 million)[12]

(1) SUPPORTING COUNTRIES' EFFORTS TO TRANSLATE IMO CONVENTIONS INTO NATIONAL LEGISLATION. The project will help countries to draft national legislation where necessary to harmonize national laws with the provisions of key IMO conventions (primarily OPRC, FUND, and CLC conventions). It will also assist countries in ratifying additional conventions that countries deem important. This subcomponent will support the training both locally and abroad of country experts on international maritime laws. It will support several regional seminars and workshops on topics related to the ratification of the IMO conventions. Finally, it will support formulation of action plans with the steps and timetable to improve implementation of the conventions. This will help countries handle the complex technical requirements of the conventions. Because countries that were included in the West Indian Ocean Oil Spill Contingency Planning Project have already ratified most of the key conventions and taken the steps needed to implement them, Kenya, Mozambique, and Tanzania will be the primary beneficiaries of this component.

(2) ASSISTING KENYA, MOZAMBIQUE, SOUTH AFRICA, AND TANZANIA TO DEVELOP NATIONAL OIL SPILL CONTINGENCY PLANS, TO JOIN THE REGIONAL PLAN, AND TO CREATE SENSITIVITY MAPS. Mozambique, Tanzania, and Kenya have yet to develop or complete national oil spill contingency plans, as they are encouraged to do under the Nairobi Convention. This component will help them to do so, building on the work already undertaken by the IMO and drawing upon the expertise that has been developed under the West Indian Ocean Oil Spill Contingency Planning Project. It will also support (under the Nairobi Convention) activities to join the regional plan prepared under the previous project that provides a framework for the countries of the region to cooperate and to provide mutual assistance in the event of an oil spill. Finally, this component will support the development of marine ecosystem sensitivity maps that will be used to identify areas of special significance that may require especially high levels of protection. The sensitivity maps will be used in the creation of the nautical charts and publications that are key elements of the marine highway

(3) OIL SPILL RESPONSE EQUIPMENT. Kenya, Mozambique, and Tanzania require oil spill equipment to be able to respond to emergencies. This subcomponent will assess the

[12] Due to rounding the GEF figures above equal US$11.1, however the total GEF amount is **US$11.0 million**

needs and provide specifications for the required equipment. Partners are expected to finance the procurement to the necessary equipment and supply it to countries.

(4) FACILITATING REGIONAL AGREEMENTS AND DEVELOPMENT OF A REGIONAL CONTINGENCY PLAN. The project will facilitate the establishment of regional cooperation agreements between the participating countries on prevention of transboundary marine pollution, safety of marine navigation, oil spill response, and sharing of information. This activity will also support the preparation of a regional marine pollution contingency plan. This subcomponent will also support the establishment of a regional center. A regional body will be needed to coordinate national actions, to monitor region-wide environmental conditions and causes of degradation and damage, and to eventually operate the marine highway. Such a body will be critically important to coordinate multicountry activities beyond the lifetime of the project and will thus support its sustainability. The project through technical assistance and training will strengthen an appropriate organization.

The GEF will contribute in financing each of the subcomponents. The GEF will not finance the procurement of equipment. It will focus in particular on assisting countries to ratify conventions and to enact the enabling legislation and on developing national oil spill contingency plans. The IMO, the EC, and France are expected to contribute to or to cofinance the activities.

Component D: Port state control, fisheries monitoring, and project coordination and management—US$4.6 million (of which GEF financing is US$3.3 million)[13]

(1) SUPPORTING ADOPTION OF PORT STATE CONTROL. Port state control allows countries to ascertain whether ships entering their ports meet the requirements of the major IMO conventions on the safety of navigation and the prevention of pollution from ships regardless of whether or not the flag state is party to the conventions. Port state control also helps to make the operations of illegal, unreported, unregulated fishing fleet unprofitable by eliminating opportunities to land and sell fish that have been harvested in violation of the law. A regional port state control arrangement provides an effective tool to ensure that ships using international navigation routes and calling on major ports in a region comply with the rules and standards set out in the applicable IMO conventions. A memorandum of understanding for port state control in the Indian Ocean was signed on June 5, 1998, by Australia, Bangladesh, Djibouti, Eritrea, India, Iran, Kenya, Maldives, Mauritius, Mozambique, Myanmar, Seychelles, South Africa, Sri Lanka, Sudan, Tanzania and Yemen. This component will support the widening of this regional agreement on port state control to Madagascar and Comoros. Based on the work undertaken or envisaged by the IMO, this component will also promote its implementation in countries participating in the project, covering issues such as procedures for surveillance, inspection, and detention of ships, and arrangements for exchanging information. It will also support capacity building, including training of inspectors to international standards in port state control.

(2) SUPPORTING MONITORING OF FISHERIES ACTIVITIES. This subcomponent will support the development of an action plan for fisheries monitoring. It will also support

[13] Due to rounding the GEF figures above equal US$11.1, however the total GEF amount is **US$11.0 million**

implementation of its main recommendations, assuming finance is available, and no other organization or project are able to finance these.

(3) COORDINATING WITH OTHER GEF-SUPPORTED PROJECTS. A key element of the project is its commitment to coordinate and collaborate with other projects in the region that are working to protect the marine and coastal environment. This subcomponent will support activities to facilitate such coordination and collaboration, such as establishing and maintaining a project website that links to the GEF Secretariat and International Waters-Learn website, hosting regional workshops, attending the workshops and events of others, participating in the GEF-International Waters Conferences (including providing exhibits), and the like. A budget of about US$100,000 from the project has been allocated for activities to promote coordination among various GEF-supported projects.

(4) SUPPORTING PROJECT COORDINATION AND MANAGEMENT. Assistance will be needed at the regional, subregional, and national levels to manage the project and coordinate the various activities. This component will finance equipment, staff, and logistical support required by the regional body, a subregional entity, and national institutions to ensure that the project is implemented efficiently and to build sustainable capacity of the participating entities to manage the development of the marine highway and to coordinate activities after the project is completed. It will also strengthen the technical capabilities and the institutional and coordinating arrangements among the concerned states to collectively prevent, manage, and respond to transboundary marine pollution. This component will support technical assistance and studies as needed during project implementation. It will support creation of capacity for monitoring key performance indicators and for evaluating project implementation progress and impact. This component will also support the establishment of mechanisms for sustainable financing of the development of the marine highway and other infrastructure and capacity created through the project.

The GEF funds will support each of the subcomponents. GEF funds will support widening the existing regional agreement on port state control to include Madagascar and Comoros. They will support monitoring of fisheries activities, coordinating with related GEF-supported projects, and project coordination and management and activities aimed at developing and maintaining linkages among related GEF projects.

Annex 5: Project Costs

Western Indian Ocean
GEF-Marine Highway and Coastal Contamination Prevention Project

Annex 5

Western Indian Ocean

Marine Highway Development and Coastal and Marine Contamination Prevention Project

Table A

Components Project Cost Summary

Project Components	(US$ Million)				
	Local	Foreign	Total	% Foreign Exchange	% Total Base Costs
A. Development of regional marine highway and i	1.9	9.3	11.1	83.0	49.0
B. Coastal and marine contamination prevention c	0.8	3.1	3.9	81.0	17.0
C. Building a regional oil spill response capacity	0.2	3.6	3.8	95.0	17.0
D. Port state control, fisheries monitoring, project	1.7	2.5	4.2	59.0	18.0
Total Baseline costs	**4.6**	**18.5**	**23.1**	**85.0**	**100.0**
Physical Contingencies	0.1	0.8	1.0	85.0	4.0
Price Contingencies	0.5	1.5	2.0	74.0	9.0
Total Project costs	**5.2**	**20.8**	**26.0**	**80.0**	**113.0**

Note: Figures may not add up to total due to rounding

Annex 5

Western Indian Ocean

Marine Highway Development and Coastal and Marine Contamination Prevention Project

Table B

Components Project Cost Summary

(US$ Million)

Project Components	Local	Foreign	Total	% Foreign Exchange	% Total Base Costs
A. Development of regional marine highway and institutions					
1. Nautical charts and publications	0.5	3.3	3.8	86.0	17.0
2. Maintenance of charts and publications	0.2	0.9	1.0	85.0	5.0
3. Aids to navigation	0.1	0.4	0.5	85.0	2.0
4. Automatic Information System	1.0	4.2	5.2	81.0	23.0
5. Support to search and rescue	0.0	0.1	0.1	85.0	0.0
6. Evaluation of the demonstration phase and preparation of phase 2	0.1	0.4	0.4	85.0	2.0
Subtotal Development of regional marine highway and institutions	**1.9**	**9.3**	**11.1**	**83.0**	**49.0**
B. Coastal and marine contamination prevention capacity building					
1. Sensitization of coastal and marine protection	0.3	0.9	1.2	75.0	5.0
2. Pollution prevention and contingency management plans	0.3	1.4	1.7	85.0	7.0
3. Methodology for valuing ecosystems benefits	0.1	0.4	0.5	85.0	2.0
4. Preparation of a regional database on marine and coastal resources	0.1	0.4	0.5	75.0	2.0
Subtotal Coastal and marine contamination prevention capacity building	**0.8**	**3.1**	**3.9**	**81.0**	**17.0**
C. Building a regional oil spill response capacity					
1. Ratifications of conventions	0.0	0.6	0.7	94.0	3.0
2. Development of national oil spill contingency plans	0.1	0.6	0.7	85.0	3.0
3. Oil spill response equipment	0.0	2.3	2.4	99.0	10.0
4. Regional agreement and regional contingency plan	0.1	0.1	0.2	65.0	1.0
Subtotal Building a regional oil spill response capacity	**0.2**	**3.6**	**3.8**	**95.0**	**17.0**
D. Port state control, fisheries monitoring, project coordination and management					
1. Promotion of port state control	0.2	0.9	1.0	85.0	4.0
2. Support for monitoring of fisheries activities	0.1	0.4	0.5	85.0	2.0
3. Coordination with other related GEF supported projects	0.0	0.1	0.1	85.0	0.0
4. Project coordination and management	1.5	1.1	2.6	43.0	11.0
Subtotal Port state control, fisheries monitoring, project coordination and mana	**1.7**	**2.5**	**4.2**	**59.0**	**18.0**
Total Baseline costs	**4.6**	**18.5**	**23.1**	**85.0**	**100.0**
Physical Contingencies	0.1	0.8	1.0	85.0	4.0
Price Contingencies	0.5	1.5	2.0	74.0	9.0
Total Project costs	**5.2**	**20.8**	**26.0**	**80.0**	**113.0**

Note: Figures may not add up to total due to rounding

Western Indian Ocean

Marine Highway Development and Coastal and Marine Contamination Prevention Project

Table C

Components Project Cost Summary

	(ZAR Million)			(US$ Million)				
	Local	Foreign	Total	Local	Foreign	Total	% Foreign Exchange	% Total Base Costs
A. Development of regional marine highway and institutions								
1. Nautical charts and publications	3.8	23.1	26.9	0.5	3.3	3.8	86	17
2. Maintenance of charts and publications	1.1	6.2	7.3	0.2	0.9	1.0	85	5
3. Aids to navigation	0.5	2.8	3.3	0.1	0.4	0.5	85	2
4. Automatic Information System	7.1	29.6	36.7	1.0	4.2	5.2	81	23
5. Support to search and rescue	0.1	0.6	0.7	0.0	0.1	0.1	85	0
6. Evaluation of the demonstration phase and preparation of phase 2	0.4	2.5	3.0	0.1	0.4	0.4	85	2
Subtotal Development of regional marine highway and institutions	**13.1**	**64.8**	**78.0**	**1.9**	**9.3**	**11.1**	**83**	**48**
B. Coastal and marine contamination prevention capacity building								
1. Sensitization of coastal and marine protection	2.1	6.3	8.4	0.3	0.9	1.2	75	5
2. Pollution prevention and contingency management plans	1.8	10.0	11.8	0.3	1.4	1.7	85	7
3. Methodology for valuing ecosystems benefits	0.5	3.0	3.5	0.1	0.4	0.5	85	2
4. Preparation of a regional database on marine and coastal resources	0.9	2.6	3.5	0.1	0.4	0.5	75	2
Subtotal Coastal and marine contamination prevention capacity building	**5.3**	**21.9**	**27.2**	**0.8**	**3.1**	**3.9**	**81**	**17**
C. Building a regional oil spill response capacity								
1. Ratifications of conventions	0.3	4.4	4.7	0.0	0.6	0.7	94	3
2. Development of national oil spill contingency plans	0.7	4.0	4.7	0.1	0.6	0.7	85	3
3. Oil spill response equipment	0.1	16.3	16.5	0.0	2.3	2.4	99	10
4. Regional agreement and regional contingency plan	0.4	0.7	1.1	0.1	0.1	0.2	65	1
Subtotal Building a regional oil spill response capacity	**1.5**	**25.4**	**26.8**	**0.2**	**3.6**	**3.8**	**95**	**17**
D. Port state control, fisheries monitoring, project coordination and managemer								
1. Promotion of port state control	1.1	6.0	7.0	0.2	0.9	1.0	85	4
2. Support for monitoring of fisheries activities	0.5	3.0	3.5	0.1	0.4	0.5	85	2
3. Coordination with other related GEF supported projects	0.1	0.6	0.7	0.0	0.1	0.1	85	0
4. Project coordination and management	10.3	7.9	18.2	1.5	1.1	2.6	43	11
Subtotal Port state control, fisheries monitoring, project coordination and mana	**12.0**	**17.4**	**29.4**	**1.7**	**2.5**	**4.2**	**59**	**18**
Total Baseline costs	**31.9**	**129.5**	**161.4**	**4.6**	**18.5**	**23.1**	**85**	**100**
Physical Contingencies	1.0	5.7	6.7	0.1	0.8	1.0	85	4
Price Contingencies	3.5	10.2	13.8	0.5	1.5	2.0	74	9
Total Project costs	**36.4**	**145.4**	**181.9**	**5.2**	**20.8**	**26.0**	**80**	**113**

Note: Figures may not add up to total due to rounding

Annex 5

Western Indian Ocean

Marine Highway Development and Coastal and Marine Contamination Prevention Project

Table E

Components by Financiers - Totals Including Contingencies

(US$ Million)

	GEF		Western Indian Ocean Governments		Identified Financing		Total	
	Amount	**%**	**Amount**	**%**	**Amount**	**%**	**Amount**	**%**
A. Development of regional marine highway and institutions								
1. Nautical charts and publications	2.4	56	0.3	8	1.6	36	4.3	17
2. Maintenance of charts and publications	0.9	71	0.0	0	0.4	29	1.2	5
3. Aids to navigation	0.5	88	0.0	0	0.1	12	0.5	2
4. Automatic Information System	1.7	28	0.0	0	4.2	71	5.9	23
5. Support to search and rescue	0.1	100	0.0	0	-0.0	-0	0.1	0
6. Evaluation of the demonstration phase and preparation of phase 2	0.4	75	0.0	0	0.1	25	0.5	2
Subtotal Development of regional marine highway and institutions	**6.0**	**47**	**0.4**	**3**	**6.3**	**50**	**12.6**	**49**
B. Coastal and marine contamination prevention capacity building								
1. Sensitization of coastal and marine protection	0.5	37	0.0	0	0.8	63	1.3	5
2. Pollution prevention and contingency management plans	0.3	16	0.0	0	1.6	84	1.9	7
3. Methodology for valuing ecosystems benefits	0.2	30	0.0	0	0.4	70	0.6	2
4. Preparation of a regional database on marine and coastal resources	0.2	30	-0.0	-0	0.4	70	0.6	2
Subtotal Coastal and marine contamination prevention capacity building	**1.1**	**26**	**0.0**	**0**	**3.2**	**74**	**4.3**	**17**
C. Building a regional oil spill response capacity								
1. Ratifications of conventions	0.3	44	-0.0	-0	0.4	56	0.8	3
2. Development of national oil spill contingency plans	0.2	28	0.0	0	0.6	72	0.8	3
3. Oil spill response equipment	-	-	0.9	33	1.8	67	2.6	10
4. Regional agreement and regional contingency plan	0.1	70	-0.0	-0	0.1	30	0.2	1
Subtotal Building a regional oil spill response capacity	**0.7**	**16**	**0.9**	**20**	**2.8**	**64**	**4.4**	**17**
D. Port state control, fisheries monitoring, project coordination and management								
1. Promotion of port state control	0.4	40	-0.0	-0	0.6	60	1.1	4
2. Support for monitoring of fisheries activities	0.5	90	-0.0	-0	0.1	10	0.5	2
3. Coordination with other related GEF supported projects	0.1	50	0.0	0	0.1	50	0.1	0
4. Project coordination and management	2.3 [1]	79	0.6	20	0.0	1	2.9	11
Subtotal Regional institutional strengthening & project management	**3.3**	**70**	**0.6**	**12**	**0.8**	**17**	**4.6**	**18**
Total Disbursement	**11.0**	**42**	**1.8**	**7**	**13.1**	**51**	**26.0**	**100**

Notes: Figures may not add up to total due to rounding, the total GEF amount is US$11.0 million

1 See Table below with a break down of Component D.4

D. Port state control, fisheries monitoring, project coordination and Project Management	
4. a. Project Management	1.1
4. b. Other Technical Assistance, monitoring and auditing	1.2
Total	2.3

Annex 6: Implementation Arrangements

Western Indian Ocean
GEF-Marine Highway and Coastal Contamination Prevention Project

Partnership arrangements

The project will be implemented in partnership with multilateral organizations, with industry groups representing both the shipping and oil industries, and with donors. Specialized international and national organizations—including IALA, the IHO, the IMO, the UKHO, and SHOM—will be close partners in preventing marine contamination and in developing the national and the regional oil spill response contingency plans. UNEP through its Regional Seas Program will be a partner in protecting critical habitats and biodiversity. UNDP will be a partner in assessing risks to the ecosystem of the western Indian Ocean. The oil and shipping industries will provide expert advice and technical support to the project. France will participate as a partner through La Réunion island. Both the EC and Norway will provide support for project activities (see annex 19).

Implementation arrangements

Project implementation period. The project will be implemented during fiscal 2007–11, completed by December 31, 2010 and closed by June 30, 2011.

Executing agencies. Given the technical nature of some aspects of the project and the large number of countries involved, a regional project management unit will be established at SAMSA headed by a regional coordinator. This will be responsible for implementing component A (development of a regional marine highway), part of component D (port state control and project coordination and management), and for overall coordination of project implementation. SAMSA will also be accountable for ensuring that financial reporting and auditing requirements are met and that World Bank procurement, disbursement, and financial management policies and procedures are complied with. A subregional project management unit will also be established at the IOC to implement project components B (capacity building for prevention of marine and coastal contamination), C (building oil and chemical spill response capacity), and part of component D (support for monitoring of fisheries activities, coordination with other related GEF-supported projects and project coordination and management). National project coordinators from the ministry of transport or the ministry of environment of each country will coordinate implementation of the national-level activities and all beneficiary agencies.

Project oversight. A steering committee—comprising senior officials responsible for transport or the environment or both of each of the beneficiary countries, the Chief Executive Officer of SAMSA, the Secretary General of the IOC—will be responsible for the overall monitoring of project implementation. The IMO, IALA, IHO, the Nairobi Convention secretariat, and the secretariat of the New Partnership for Africa's Development will participate as observers. The steering committee will meet as required, but at least once a year.

Procurement. Works, consultants and equipment to be financed under the GEF grant will be procured according to World Bank procurement guidelines dated May 2004.

Accounting, financial reporting and auditing arrangements. SAMSA and the IOC will establish project accounting systems tracking the cost of the various goods and services provided under the project, according to the most recent World Bank Financial Management Guidelines published by the World Bank. Auditing will be carried out by independent auditors acceptable to the Bank, and the results of such audits will be submitted to the Bank no later than six months after the end of the fiscal year of SAMSA.

Supervision. The Bank will devote some 100 staff weeks to supervise progress under the GEF grant through fiscal 2011. Supervision will focus on progress in achieving specific objectives, such as establishing the marine highway, ratification of conventions, development of the national and regional contingency plans, development of capacity for port state control progress with activities related to monitoring of fisheries activities, coordination of related GEF-supported projects, procurement, financial management, and overall project implementation. During supervision and project reviews, particular attention will be paid to implementation of the mechanisms designed to promote institutional and financial sustainability.

Annex 7: Financial Management and Disbursement Arrangements

Western Indian Ocean
GEF-Marine Highway and Coastal Contamination Prevention Project

A. SOUTH AFRICA (approximately US$8 million)

1. Country risk

South Africa has not yet been the subject of a Country Financial Accountability Assessment, and none is scheduled to date as there is no significant lending program. The country, however, has a highly developed financial management infrastructure, including an established profession, high numbers of qualified and experienced personnel, and training institutions, and abundant resources. Few financial management professionals, however, have experience with Bank procedures, due to the low numbers of Bank financed activities in the country. This shortcoming will be mitigated by using, as far as possible, the existing country systems.

The country has a good reservoir of qualified accounting professionals, and by African standards, has an adequately staffed Audit Office. In addition, where time is of the essence, the Auditor General is allowed by legislation to out-source some of the work. The Auditor General's Office has already produced several annual audit reports satisfactory to the Bank.

2. Project risks

SAMSA, the implementing agency for South Africa, is well established, governed by an Act of Parliament enacted in 1998. The organization prior to 1998 existed as an unit of the Department of Transport. SAMSA therefore has fully established structures, coherent procedures, and proven personnel.

The project is multicountry and complex, but the main implementing entity is quite stable and well resourced. From the financial management viewpoint, therefore, overall project risk is likely to be no more than negligible to moderate, as there are well established structures for dealing with any issues that may arise.

3. Strengths and weaknesses

3.1 Probable strengths

Project financial management will be overseen by the existing SAMSA finance department. This department will be responsible for receiving and reviewing the completeness and appropriateness of invoices and other requests for payment, as well as the capturing of relevant data. While the staff of SAMSA's finance department was below that required, action has been taken to restructure the finance department to better service its clients, and to fill the existing vacancies. The newly constituted accounting department's systems, procedures, and software

are all well established, tried, and tested, and this will be very positive for the financial management of the project.

3.2 Weaknesses

The funds will flow according to a setup acceptable to the World Bank and to be detailed in the tripartite agreement (signing of the tripartite agreement is a condition of effectiveness). It may take some time before the process is refined and functioning smoothly.

None of SAMSA's staff have prior experience working with Bank-financed projects, and that experience will be missed. However, as much of the existing country system as possible will be used, to optimize the use of available resources.

The multicountry nature of the project is also a possible weakness, as activities are spread across eight countries. The risk that this could pose is mitigated by the use of the Indian Ocean Commission, in addition to SAMSA, to implement some of the project activities.

4. Financial management system and reporting

4.1 Organizational structure

The project will utilize the existing SAMSA finance department structure. The finance department is now fully staffed and no additional staff will be required. The current structure is headed by a chief financial officer, who is well qualified and supported by a financial accountant (filled) and a management accountant (now also filled). There are additional officers for accounts receivable (filled), accounts payable (filled), banking (filled), and supply chain management (filled). The expertise of the available staff is adequate.

4.2 Accounting policies and procedures

Project financial management will be based on the existing SAMSA financial management system. SAMSA already has comprehensive procedure manuals giving guidance on:

- Financial policies and procedures to be applied.
- Chart of accounts.
- Accounting and internal control system to be followed.
- Nature and timing of financial reporting.
- Auditing arrangements.

The manual has been updated slightly to incorporate the additional financial activities associated with the new source of funds (GEF, administered by the Bank), in particular the flow of funds channels for the GEF funding, the additional reporting requirements, and details of:

- **Any additional account codes for use by the project**—the coding system gives sufficient flexibility to provide financial information by:
  - Project activity

- Project component
- Disbursement/expenditure category.

- **Fixed assets**—creation of a sub-register specifically for project assets if any, and the nature of the details therein.
- **Budgeting**—salient features of the project's budget preparation process, and the monitoring of actual expenditures in relation to the budget.

4.3 Accounting system

The accounting system for the proposed project will be based on the existing 'Dynamics' software, the double entry computerized system currently in use by SAMSA. The objectives of the system include the achievement of:

- Proper recording of assets, liabilities, revenues (where applicable), and expenditures of the project.
- Providing accurate and timely management information.
- Providing timely and accurate information for use by other stakeholders in the formats that they require.
- Supporting the preparation of statutory and other audits.

The accounting system must support the general principles of equity, economy, efficiency, and effectiveness.

With regard to the Bank's requirements, SAMSA will coordinate the production of quarterly progress reports. The system must be able to support the production of quarterly financial monitoring reports (FMRs), which integrate project accounting, procurement, contract management, disbursement, and physical progress of activities on the ground. It is the contention of SAMSA management that the 'Dynamics' software is capable of producing these reports.

4.4 Reporting

4.4.1 Financial management reports

Formats of the various periodic FMRs to be generated from the financial management system will be developed. Linkages between the information in these reports and the Chart of Accounts will be clear. The FMRs will be designed to provide quality and timely information to project management and various stakeholders on project performance.

The following minimum *quarterly* FMRs will be produced:

- Financial Reports:
  - Sources and Uses of Funds by Activity
  - Sources and Uses of Funds by Component
  - Special Account Reconciliation.
- Physical Progress Report.

- Procurement Monitoring Report.

The formats were designed and agreed at negotiations. SAMSA is capable of generating the reports without difficulty.

The FMRs will be produced for reporting purposes only. Disbursements will be transaction based (use an advance from the Special Account, statements of expenditure (SOEs) and withdrawal applications). Only with consistent satisfactory performance in terms of the production of FMRs will report-based disbursements be considered.

4.4.2 Project financial statements

The Grant Agreement will require the submission of audited financial statements to the Bank within six months after the end of the financial year.

The financial statements will consist of:

- A *Statement of Sources and Uses of Funds* which recognizes all cash receipts, cash payments, and cash balances controlled by the project.
- The *Special Account Reconciliation.*
- The *Accounting Policies Adopted and Explanatory Notes.* The explanatory notes should be presented in a systematic manner with items on the *Statement of Sources and Uses* being cross referenced to any related information in the notes. Examples of this information include:
  - A summary of fixed assets by category of assets.
  - A summary of SOE Withdrawal Schedule, listing individual withdrawal applications.
- A *Management Assertion* that Bank funds have been expended in accordance with the intended purposes as specified in the relevant World Bank legal agreement.

5. Audit

5.1 Internal audit

SAMSA outsources internal audit to Manase and Associates (being replaced) and is appointing a staff from SAMSA as internal auditor. At this point in time, the auditors have submitted their audit risk assessment and audit plan to SAMSA's audit committee for ratification before commencing the actual work. This arrangement is satisfactory.

5.2 External audit

The statutory auditor of SAMSA is the Controller and Auditor General of South Africa. In recent years however, the Auditor General has subcontracted the work out to a number of firms, who carry out the work on his behalf. The current auditor is Xabiso Chartered Accountants (South Africa), and this arrangement is acceptable to the Bank. The Controller and Auditor General's standard terms of audit are acceptable to the Bank, but an emphasis letter may need to be written by the project to ensure compliance with the following requirements for audit by the Bank:

- The external audit will need to cover all GEF funds and counterpart funds (if applicable) at all levels of project execution.
- The auditor will be required to express an opinion on the audited project financial statements only, in compliance with International Standards on Auditing (IFAC/INTOSAI pronouncements) and submit the audit report within six months of the end of the financial year.
- In addition, detailed management letters containing the auditor's assessment of the internal controls, accounting system, and compliance with financial covenants in the Grant Agreement, along with suggestions for improvement will be prepared and submitted to management for follow-up.

6. Supervision

Financial management supervision will be carried out regularly by a World Bank financial management specialist at least once a year. The initial supervision will be on implementation progress of agreed actions as per paragraph 11 below. In addition, the project may be subjected to SOE reviews by the World Bank when deemed necessary.

The financial management specialist will:

- Conduct financial management supervision before effectiveness/initial disbursement;
- Review the financial component of the quarterly FMR s as soon as they are submitted to the World Bank; and
- Review the annual audit reports and management letters from the external auditors and follow-up on material accountability issues by engaging with the task team leader, client, and/or auditors.

7. Procurement arrangements

Procurement by the project will be under the management of a specialist (being recruited). There are no procurement arrangements that specifically impact the proposed FM arrangements.

8. Special Account and flow of funds arrangements

The flow of funds arrangements for the project will entail the operation of the following bank accounts:

- GEF funds:
  - A US$ denominated Special Account to be operated by the counterpart and held at a local commercial bank acceptable to the Bank.
- Payments in local currency will be paid through a Rand denominated Project Account to be operated by SAMSA. Conversions to local currency will be for eligible expenditures only, as and when due.

The Bank will disburse an initial advance from the proceeds of the grant into the Special Account. Actual expenditure from the account will be replenished through submission of Withdrawal Applications and against SOEs, which will be approved in accordance with established internal control procedures at SAMSA.

Counterpart funding and funding from other donors will be entirely in kind contributions. GEF will finance 100 percent of expenditures incurred under the project. The percentage for GEF financing has been calculated on the basis of the provisions in section 9 (e) of the memorandum of understanding for project implementation (signed by the beneficiary countries) to finance eligible expenditures. If any change is made to these provisions that has the effect of levying taxes or customs duties on such goods, services or works, the percentages of GEF financing shall be decreased in accordance with the provisions of section 5.08 of the General Conditions of the legal agreement.

The bank accounts should be in place by the time of effectiveness. Details of the necessary authorizations and the bank account signatories will be documented and included in the GEF annex of the existing procedures manual.

The funds will flow according to a setup acceptable to the World Bank and to be detailed in the tripartite agreement (signing of the tripartite agreement is a condition of effectiveness).

B. INDIAN OCEAN COMMISSION (approximately US$3 million)

9. Financial management assessment

The Indian Ocean Commission was established in 1984 in Seychelles. The IOC secretariat, which is based in Mauritius, will be responsible for implementing Components B, C, and part of D of the project.

The IOC has satisfactorily implemented Bank assisted projects before, starting with the Western Indian Ocean Oil Spill Contingency Planning Project, which closed in June 2004. It also implemented the Indian Ocean Coral Reef Monitoring Network Project, which closed in July 2005. No detailed financial management assessment is therefore deemed necessary for the IOC, which is successfully accounting for the recently closed GEF project, in addition to that of the earlier project.

The existing IOC finance department will handle all the accounting for the new project. The Head of Finance of IOC indicated that the existing staff will be sufficient to handle the additional work, and the existing accounting software will be able to cope.

10. Reporting arrangements

The IOC will produce the quarterly and annual financial reports indicated in 4.4 above with respect to the components it manages, and submit these to the recipient at least two weeks before the due date for submission to the Bank. The recipient will then consolidate the submissions to produce one report for the full project.

Annually, the IOC will have its project accounts audited per the standard auditing covenants in the Grant Agreement and submit these for consolidation into the main project accounts prepared by SAMSA. Suitable arrangements will need to be made to ensure that they are submitted on schedule to meet the Bank's reporting and submission deadlines.

11. External audit

The IOC will need to appoint auditors for the project, on terms acceptable to the Bank, to carry out the annual audit of the project activities. The appointment must be finalized within three months of effectiveness.

12. Flow of funds

Funds for the components managed by the IOC will flow directly from the Grant Account to the project Special Account (US$). Local currency expenditures will be processed through a Mauritian Rupee Project Account. The accounts are to be maintained in a commercial bank acceptable to the Bank. Conversions to local currency will be for eligible expenditures only, as and when due.

C. DISBURSEMENT ARRANGEMENTS

13. Disbursement

Disbursements from the Grant will be made on the basis of incurred eligible expenditures (transaction based disbursements). The Bank will advance an initial amount ($600,000 to Special Account A and $200,000 to Special Account B) from the proceeds of the Grant into the two Special Accounts (one at SAMSA, Special account A, and one at IOC, Special Account B). The advance to the Special Accounts will be used by the Recipient to finance the GEF's share of project expenditures under the proposed grant.

Where necessary, the direct payment method, involving direct payments from the Grant Account to third parties for works, goods, and services, may be utilized upon the recipient's request. Payments may also be made to a commercial bank for expenditures against special commitments of the Bank covering a commercial bank's Letter of Credit. The Bank's Disbursement Letter will stipulate the minimum application value for direct payment and special commitment procedures.

Upon effectiveness, the project will be required to submit a withdrawal application for an initial deposit to the Special Accounts. The deposit will be drawn from the Grant Account, in an amount to be agreed and specified in the Grant Agreement.

14. Eligibility of Expenditures

Although the grant will finance eligible expenditures up to 100 percent, the amount so financed will be net of all taxes and duties. Since the grant will not finance any form of tax, it may be

useful, whenever necessary, for the project to obtain the necessary exemptions from taxation upfront.

15. Use of statements of expenditure

Replenishment of funds from the Bank to the Special Accounts will be made upon evidence of satisfactory utilization of the advance, reflected in SOEs and/or on submission of full documentation for payments above SOE thresholds. The Bank may require withdrawals from the GEF Trust Fund Grant Account to be made on the basis of statements of expenditure for expenditures under contracts for: (a) goods costing less than US$150,000 equivalent per contract; (b) works costing less than US$250,000 equivalent per contract; (c) services of individual consultants costing less than $50,000equivalent per contract; (d) services of consulting firms costing less than US$100,000equivalent per contract; and (e) operating costs and training and workshops, all under such terms and conditions as the Bank shall specify by notice to the Recipient. Replenishment applications will be required to be submitted regularly (generally monthly). If ineligible expenditures are found to have been made from the Special Accounts, the grant recipient will be obligated to refund the same. If the Special Accounts remain inactive for more than six months, the grant recipient may be requested to refund to the Bank amounts advanced to the Special Accounts.

The Bank will have the right, as will be reflected in the Grant Agreement, to suspend disbursement of the funds if reporting requirements are not complied with.

15. Retroactive Financing

Retroactive financing of up to US$200,000 from the grant is recommended for expenditures incurred after March 1, 2007 under categories 3 (a) and 5(a) of Grant proceeds (Annex 8, Table C).

16. Financial management action plan

No.	Action	Due date	Conditionality
1.	Agree on format for FMR s.	Negotiations (complete).	Copy of formats attached to minutes of negotiations
2.	Demonstrate ability to prepare FMR s.	Immediately after agreement on the formats.	None
3.	Appoint suitable persons to Accounting positions under recruitment.	Being finalized. Done as of October 2006.	None
4.	Open the Special Accounts, and the Project Accounts in commercial banks acceptable to the Bank.	Before initial disbursement.	None
5.	Appoint external auditors	Within 3 months of effectiveness	Dated covenant

17. Financial covenants and effectiveness conditions

Financial covenants—standard per Article IV of the Grant Agreement.

Effectiveness conditions (if any) to be drawn from the financial management action plan above.

18. Conclusion

The overall conclusions of the current financial management assessment are that:

- The proposed financial management arrangements satisfy the Bank's minimum requirements for financial management at the project, and
- Overall project financial management risk is assessed as negligible to moderate.

Annex 7

Western Indian Ocean

arine Highway Development and Coastal and Marine Contamination Prevention Project

Table A

Disbursement per year

Total Project Disbursement

(in US$ million)

Bank FY	2007	2008	2009	2010	2011
Annual	2.4	6.4	7.5	6.3	3.4
Cumulative	2.4	8.8	16.4	22.6	26.0
Percentage	9%	34%	63%	87%	100%

Note: Figures may not add up to total due to rounding

GEF Disbursement

(in US$ million)

Bank FY	2007	2008	2009	2010	2011
Annual	0.1	2.0	4.1	3.8	1.0
Cumulative	0.1	2.1	6.2	10.0	11.0
Percentage	1%	19%	56%	91%	100%

Note: Figures may not add up to total due to rounding

Other contributors (in-kind) and donors Disbursement

(in US$ million)

Bank FY	2007	2008	2009	2010	2011
Annual	2.5	4.4	3.4	2.4	2.4
Cumulative	2.5	6.8	10.2	12.7	15.0
Percentage	16%	45%	68%	84%	100%

Note: Figures may not add up to total due to rounding

Annex 8: Procurement Arrangements

Western Indian Ocean
GEF-Marine Highway and Coastal Contamination Prevention Project

The following procurement arrangements will apply to all wholly or partly GEF/Bank financed contracts.

A. General

All procurement for components A and D will be carried out by SAMSA through the regional project management unit. All procurement for components B and C will be carried out by the IOC through the subregional project management unit, under the monitoring of the regional project management unit. Works and goods wholly or partly financed by GEF/Bank will be procured in accordance with the Bank's guidelines for Procurement under IBRD Loans and IDA Credits dated May 2004. Consultancy services wholly or partly financed by GEF/Bank will be procured in accordance with the Bank's Guidelines for Selection and Employment of Consultants by World Bank Borrowers published in May 2004. The regional project management unit and the subregional project management unit responsible for procurement will be strengthened to ensure that the staff has adequate skills and competence to implement the project. A General Procurement Notice was agreed at negotiations. It will be transmitted by SAMSA to the Bank for publication in the United Nations Development Business to advertise all works being procured through International Competitive Bidding (ICB) and goods and major consulting assignments expected to be financed by GEF/Bank under the project. During negotiations assurances were obtained from SAMSA and the IOC that the procurement arrangements will be followed during project implementation. Table A below provides information on the project elements, their estimated costs and methods of procurement including elements financed by the GEF/Bank as well as those financed by other sources.

Procurement of works. Works procured under this project will include: use of a specific vessel for marine surveys, and construction and/or refurbishing of lighthouses and office buildings for radio receivers. The procurement will be done using the Bank's Standard Bidding Documents (SBD) for all ICB and National Competitive Bidding (NCB). For contracts estimated to cost less than US$500,000 equivalent per contract, procurement of civil works may be carried out through NCB and contracts for small works, estimated to cost less than US$50,000, will be procured through quotations procedures. The use of a specific vessel may be procured through direct contracting in accordance with provisions of paragraph 3.6 of the Guidelines.

Procurement of goods and equipment. Goods procured under this project will include: radio receivers, vehicles, office equipment, and information technology and software for links between marine rescue coordination centers. The procurement will be done using the Bank's SBD for all ICB and NCB. To the extent practicable, contracts shall be grouped into bid packages estimated to cost the equivalent of US$250,000 or more and will be procured through International Competitive Bidding (ICB) procedures. For contracts estimated to cost less than US$250,000

equivalent per contract, procurement of goods may be carried out through National Competitive Bidding (NCB) procedures and purchase of small furniture estimated to cost less than US$30,000 will be conducted through prudent shopping procedures.

Selection of consultants and training. Consultancy contracts for the project including financial and technical audits, training and workshops, technical assistance, studies and surveys, will be carried out in accordance with the Bank's Guidelines. Short lists of consultants for services estimated to cost less than US$100,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Guidelines, if a minimum of three qualified consultants are available. Firms will be recruited on the basis of the Quality and Cost Based Selection (QCBS) method, using the Bank's Standard Request for Proposals. Least Cost Selection (LCS) may be used for financial audits in accordance with the provisions of paragraph 3.6 of the Guidelines. Selection based on consultants' qualifications (CQ) can be used for the recruitment of training institutions and for assignments that meet criteria set out in paragraph 3.7 of the Consultant Guidelines. Single source selection (SSS) can be used to contract firms for assignment that meet criteria set out in paragraph 3.9 to 3.13 of the Consultant Guidelines and for contracts that do not exceed US$100,000. Recruitment of individual consultants for assistance to IOC and/or the project management unit to carry out project implementation will be done in accordance with the provisions of Section V of the Guidelines. For experts provided to the project by the partners, expenses for travel and subsistence expenditures will be processed under statement of expenditures.

Operating Costs. The project will finance the additional staff salaries, incremental costs. All staff selection within this category shall be done according Section V of Consultant Guidelines. Contribution to the operating costs of and fuel for the vessel which will be used to carry out the surveys for the main route of the Marine Highway will also be included under this category of expenditures.

Procurement plans and advance procurement actions. SAMSA and the IOC have provided detailed procurement plans for the first eighteen months of the implementation of the project. These procurement plans will be used as a basis for monitoring of procurement processing. The following documents will also be prepared by SAMSA and the IOC and transmitted to the Bank for review: (a) draft General Procurement Notice; (b) draft bidding documents for ICB; and (c) terms of reference, short list, Letter of Invitation (LOI), draft model contract for studies, expertise and training. These documents were agreed during negotiations, and will be finalized prior to effectiveness.

Reporting. It will be agreed with SAMSA and the IOC that a monthly progress report up to grant effectiveness will be prepared in sufficient detail and transmitted to the Bank. During project implementation (after effectiveness), a semiannual report will be adequate. These details will include: major procurement actions dealt with during the previous semester and major procurement actions planned for the following semester, an update of the procurement implementation table, time taken for specific actions such as completion of essential bidding documents, bid evaluation, compliance with aggregate limits on specified methods of procurement.

B. Assessment of the agency's capacity to implement procurement

Capacity of the IOC for financial management and procurement is satisfactory. Assessments of capacity carried out during the implementation of the Western Indian Ocean Oil Spill Contingency Planning Project and the Indian Ocean Coral Reef Monitoring Network Project have consistently found the organization in full compliance with Bank procedures concerning financial management and procurement.

An assessment of the capacity of SAMSA to implement procurement actions for the project has been carried out by Sylvain Rambeloson, Senior Procurement Specialist, in August 2005. The assessment reviewed the organizational structure for implementing the project and the interaction between the project's staff responsible for procurement and SAMSA's chief executive officer.

The key issues and risks concerning procurement for implementation of the project have been identified and include the phasing of activities to be undertaken and possible emerging of emergency cases. The corrective measures which have been agreed are the close follow-up of the agreed procurement plan and activity scheduling. A procurement action plan will be updated quarterly and the main procurement plan will be updated accordingly.

The overall project risk for procurement is High.

Action plan to mitigate procurement risks

Deficiencies	Recommendations	Completion date
General weaknesses and deficiencies	Use Bank's procedures, standard bidding documents and standard evaluation reports (to be agreed on).	Agreed at negotiations.
Staffing gap	Assign a permanent person from SAMSA and IOC and, if needed, seek nonpermanent additional capacity (to be agreed on).	Agreed at negotiations.
Procurement planning	Use the Bank's template.	Agreed at negotiations.
Training	Provide procurement staff for specific training.	Discussed and agreed during negotiations.
Record keeping	File separately for the GEF.	During implementation.

C. Procurement plan

The Recipient developed a procurement plan at appraisal (updated during post-appraisal) for project implementation which provides the basis for the procurement methods. This plan has been agreed between the Recipient and the project team on August 2005 and is available at SAMSA office (updated and left with SAMSA in September 2006). It will also be available in the project's database and on the Bank's external website. The procurement plan will be updated in agreement with the project team annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

D. Frequency of procurement supervision

In addition to the prior review to be carried by the Bank, the capacity assessment of the implementing agencies has recommended annual supervision missions to carry out post reviews of procurement actions.

E. Details of the Procurement Arrangements Involving International Competition

1. Goods, Works, and Non Consulting Services

(a) List of contract packages to be procured following ICB procedures:

	Description	Estimated cost (US$)	Proc. method	Pre qualif	Domestic preferences	Bank Review	Expected bid opening	Comments
Aw001	Main route surveys in (not including the use of specific vessel)	810,000	ICB	yes	No	Yes	October 2008	
Aw002	Use of specific equipped vessel for surveys	700,000	ICB	yes	No	Yes	October 2008	
Aw003	Lighthouses	475,000	ICB	No	No	Yes	April 2008	
Ag002	AIS Radio receivers	965,000	ICB	No	No	Yes	May 2008	

(b) ICB contracts estimated to cost above US$500,000 for works and US$250,000 for goods per contract will be subject to prior review by the Bank. The Table B presented later gives the procurement methods and thresholds.

2. Consulting Services

(a) List of consulting assignments with short list of international firms:

Ref	Assignment	Estimated cost (US$)	Selection Method	Bank review	Expected proposals	Comments
D-01	Project coordinator	400,000	IC	Yes	April 2007	(4 years) Including charges
D-02	Subregional coordinator	200,000	IC	Yes	April 2007	(4 years) Including charges
D-03	Financial Audits for SAMSA	325,000	LC	Yes	June 2007	

D-04	Financial Audits for IOC	175,000	LC	Yes	December 2007	
D-05	Project Mgt support for SAMSA	100,000	QCBS	Yes	September 2007	
D-06	Project Mgt support for IOC	50,000	QCBS	Yes	October 2007	
A-	Use of diverse experts from partners	1,200,000	Multiple SSS	Majority Yes	Refer to PIM	No fees charged
B-	Use of diverse experts	1,607,000	IC/SQ	Yes	Refer to PIM	
C-	Use of diverse experts	290,000	IC	Yes	Refer to PIM	
D-	Assessment and training	650,000	IC/SQ	Yes	Refer to PIM	No fees charged

(b) Consultancy services estimated to cost above US$100,000 per contract and single source selection of consultants (firms) and for individual consultants assignments estimated to cost above US$50,000 will be subject to prior review by the Bank.

(c) Short lists composed entirely of national consultants: short lists of consultants for services estimated to cost less than US$100,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

Annex 8
Western Indian Ocean
Marine Highway Development and Coastal and Marine Contamination Prevention Project
Table A
Procurement Arrangements
(US$ Million)

	Procurement Method					
	International Competitive Bidding	National Competitive Bidding	International Shopping	Other	N.B.F	Total
A. Works	2.2	0.2	-	-	-	2.4
	(2.2)	(0.2)				(2.4)
B. Goods & Equipment	1.3	0.3	0.1	-	7.3	8.9
	(1.3)	(0.3)	(0.1)			(1.6)
C. Consultants' Services	-	-	-	4.2	3.9	8.1
				(3.4)	(0.6)	(4.0)
D. Training	-	-	-	3.1	1.9	4.9
	-	-	-	(2.0)	(0.3)	(2.3)
E. Operating costs	-	-	-	0.4	1.2	1.6
	-	-	-	(0.4)	(0.4)	(0.7)
Total	3.5	0.5	0.1	7.7	14.3	26.0
	(3.4)	(0.4)	(0.1)	(5.8)	(1.3)	(11.0)

Note: Figures in parenthesis are the respective amounts financed by GEF

Table A-I
Procurement Arrangements
SAMSA in US$ Million

	Procurement Method					
	International Competitive Bidding	**National Competitive Bidding**	**International Shopping**	**Other**	**N.B.F**	**Total**
A. Works	2.2	0.2	-	-	-	2.4
	(2.2)	(0.2)				(2.4)
B. Goods & Equipment	1.3	0.3	0.1	-	4.2	5.8
	(1.3)	(0.3)	(0.1)			(1.6)
C. Consultants' Services				2.4	2.2	4.7
				(2.0)	(0.3)	(2.3)
D. Training				1.7	-	1.7
				(1.2)		(1.2)
E. Operating costs				0.3	1.1	1.3
				(0.3)	(0.4)	(0.6)
Total	3.5	0.5	0.1	4.4	7.5	15.9
	(3.4)	(0.4)	(0.1)	(3.4)	(0.7)	(8.0)

Note: Figures in parenthesis are the respective amounts financed by GEF

Table A-II
Procurement Arrangements
IOC in US$ Million

	Procurement Method					
	International Competitive Bidding	**National Competitive Bidding**	**International Shopping**	**Other**	**N.B.F**	**Total**
A. Works	-	-	-	-	-	-
B. Goods & Equipment	-	-	-	-	3.1	3.1
C. Consultants' Services	-	-	-	1.8	1.7	3.5
				(1.4)	(0.3)	(1.7)
D. Training	-	-	-	1.4	1.9	3.3
				(0.9)	(0.3)	(1.1)
E. Operating costs	-	-	-	0.1	0.2	0.3
				(0.1)	(0.0)	(0.1)
Total	-	-	-	3.3	6.8	10.1
				(2.4)	(0.6)	(3.0)

Note: Figures in parenthesis are the respective amounts financed by GEF

Annex 8
Western Indian Ocean
Marine Highway Development and Coastal and Marine Contamination Prevention Project
Table B
Procurement Thresholds
(US$)

Expenditure Category		Contract Value (Threshold)	Procurement Method	Contracts Subject to Prior Review
1. Works		>= 500,000	I.C.B.	All
		>=250.000 < 500,000	N.C.B.	All
		< 250,000	N.C.B.	None (Post Review)
		< 50,000	Shopping	None (Post Review)
2. Goods		>=250,000	I.C.B.	ALL
		>=150.000 < 250,000	N.C.B.	ALL
		< 150,000	N.C.B.	None (Post Review)
		< 30,000	Shopping	None (Post Review)
3. Consultants'Services and Audits	Firms		Q.C.B.S./L.C.S.	>=100,000
	Individual		Individuals	>=50,000

Annex 8
Western Indian Ocean
Marine Highway Development and Coastal and Marine Contamination Prevention Project
Table C
Allocation of Grant Proceeds
GEF
(US$ '000 000)

Expenditure Category	Suggested Allocation of Grant Proceeds	
	Grant Amount	Financing %
1. Works		100
(a) for SAMSA	2.2	
(b) for IOC		
2. Goods		100
(a) for SAMSA	1.5	
(b) for IOC		
3. Consultants' Services and Audits		100
(a) for SAMSA	2.2	
(b) for IOC	1.6	
4. Training		100
(a) for SAMSA	1.2	
(b) for IOC	1.1	
5. Operating costs		100
(a) for SAMSA	0.6	
(b) for IOC	0.1	
Unallocated	0.5	
Total	**11.0**	

Grant amounts financed by GEF

Annex 9: Economic and Financial Analysis

Western Indian Ocean
GEF-Marine Highway and Coastal Contamination Prevention Project

The economic benefits from the project will derive from three main sources. First, the marine highway once established will lower the costs of shipping by reducing the risk of accidents and by allowing ships to operate in storms and other adverse conditions that would idle them if they relied on conventional navigational systems. It may also generate value for the fishing industry by contributing to improved protection of fish stocks. Second, the expansion of the regional oil and chemical spill contingency plan, the development of national plans for the countries of continental Africa, and improved port state control will reduce the risks of catastrophic environmental and property damage and loss of life from oil and chemical spills, which should be reflected in reduced insurance costs. Third, the improved environmental information systems will help policy makers to better manage natural resources. Quantification of the costs and benefits of the project is not possible at this time. The proposed project will support the installation of a demonstration marine highway, and neither the costs nor the benefits of a future investment can be assessed at this time.

Financial analysis. The project will have limited if any fiscal implications for participating countries. Ship owners are expected to bear some of the costs for maintaining and operating the marine highway through user fees, because they will benefit directly from the improved navigational services. Countries will agree by midterm review to identify sources of financing to sustain capacity for national and regional oil spill response, environmental information systems, and the like. Countries that are signatories to the CLC92 and the FUND92 conventions have a strong incentive to maintain oil spill response capacity once created. These conventions entitle signatories to compensation for damage arising from oil spills, but only if countries have maintained adequate capacity to respond to an oil spill and limit its damage. The experience of the countries participating in the Western Indian Ocean Islands Oil Spill Contingency Planning Project demonstrates that the resources required in any case are not substantial. Mauritius, which maintains a relatively high level of capacity to respond to oil spills as it seeks to become a transshipment port for the region, is allocating less than US$35,000 per year for this purpose.

The study identifying sustainable institutional and financial arrangements will be updated prior to midterm review. With project support, countries will prepare action plans to be agreed, and implement the recommendations of the study during project implementation.

Annex 10: Safeguard Policy Issues

Western Indian Ocean
GEF-Marine Highway and Coastal Contamination Prevention Project

No safeguard policies are triggered by this project.

The safeguard screening category is S2 (no safeguard issues).

The environmental screening category is C (no adverse environmental impact).

Annex 11: Project Preparation and Supervision

Western Indian Ocean
GEF-Marine Highway and Coastal Contamination Prevention Project

	Planned	Actual
PCN review	06/12/2003	10/14/2003
Initial PID to Project Information Center	10/17/2003	10/14/2003
Initial ISDS to Project Information Center	12/17/2003	12/17/2003
Appraisal	07/26/2005	07/26/2005
Post-Appraisal		09/09/2006
Negotiations	03/07/2007	03/07/2007
Board/RVP approval	04/26/2007	
Planned date of effectiveness	06/15/2007	
Planned date of midterm review	06/15/2009	
Planned closing date	06/30/2011	

Key institutions responsible for preparation of the project:

The IOC (acting on behalf the governments of Comoros, Madagascar, Mauritius, and Seychelles); and the ministries of transport of Kenya, Mozambique, South Africa, and Tanzania in collaboration with the ministries of environment prepared the project.

A GEF PDF Block B grant of US$700,000 (TF053161) was received and used for project preparation by (a) the IOC (acting on behalf the governments of Comoros, Madagascar, Mauritius, and Seychelles); and the (b) the governments of Kenya, Mozambique, South Africa, and Tanzania. The grant was used to contract consulting services for: (a) analysis of risks to the marine environment and pre-feasibility study of a potential marine highway; and (b) preparation of the project, including identifying national and regional institutions to implement the project, developing costing and implementation timelines for the activities of each component, and preparing engineering studies, financial management arrangements and procurement plans, a monitoring and evaluation plan, and a project implementation plan; and (c) support of a high-level seminar of government decision-makers, partners, and other stakeholders.

The grant is being successfully executed. Both the recipients and other stakeholders have benefited from the consultations and workshops, and gained experience in project management and administration and international procurement which will be valuable in implementing the project.

Bank staff and consultants who worked on the project included:

Name	Title	Unit
Abdelmoula Ghzala	Team Leader	AFTTR
Philippe de Naurois	Financial Analyst (consultant)	AFTTR
Wendy S. Ayres	Economist (consultant)	AFTP2
Ntombie Siwale	Program Assistant	AFTTR
Robin Broadfield	Senior Regional Coordinator (Peer Reviewer)	EASEN
Marc Juhel	Lead Transport Specialist (Peer Reviewer)	TUDTR
Subhash Seth	Procurement	AFTTR
Alberto Ninio	Lead Counsel	LEGAF
Monica Sawyer	Counsel	LEGAF
Jonathan Nyamukapa	Senior Financial Management Specialist	AFTFM
Sylvain Rambeloson	Senior Procurement Specialist	AFTPC
Neil Guy	Hydrographic Specialist (PDF B regional coordinator)	SAMSA
Raj Prayag	Environmental Specialist (consultant, PDF B)	IOC

Bank funds expended to date on project preparation:

1. Bank resources: about US$400,000
2. Trust funds: US$700,000
3. Total: US$1,100,000.

Estimated Approval and Supervision costs:

1. Remaining costs to approval: US$25,000
2. Estimated annual supervision cost: US$150,000.

Annex 12: Documents in the Project File

Western Indian Ocean
GEF-Marine Highway and Coastal Contamination Prevention Project

Bank/GEF documents

Project Concept, November 10, 2003.

Aide memoires.

Consultant reports

"Capacity Building and Training Needs Report," January 2005, by the Rotterdam Maritime Group.

"Widening the Oil Spill Contingency Capacity in the Western Indian Ocean Region (Kenya, Mozambique, and Tanzania), January 2005, by the Rotterdam Maritime Group.

"Western Indian Ocean Pollution Risk Assessment," January 2005, by the Rotterdam Maritime Group.

"Regional Marine Highway Development Pre-Feasibility Report," January 2005, by the Rotterdam Maritime Group.

"Regional Institutional Strengthening and Project Management," January 2005, by the Rotterdam Maritime Group.

Annex 13: Statement of Loans and Credits

Western Indian Ocean
GEF-Marine Highway and Coastal Contamination Prevention Project

(Not applicable)

Annex 14: Countries at a Glance

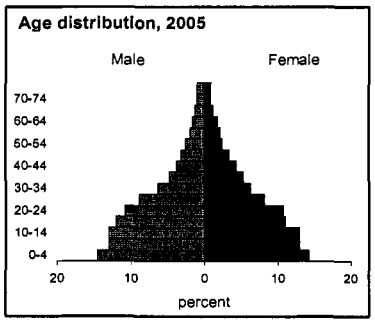
Western Indian Ocean
GEF-Marine Highway and Coastal Contamination Prevention Project

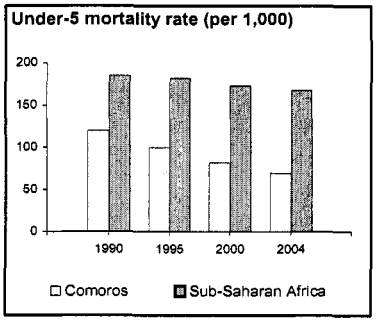
(See next page)

Comoros at a glance

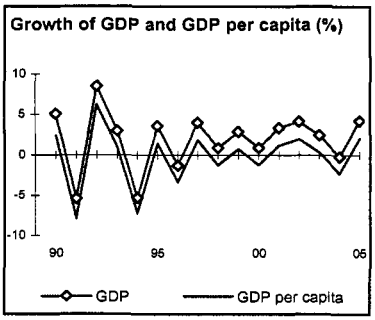
11/6/06

Key Development Indicators (2005)	Comoros	Sub-Saharan Africa	Low income
Population, mid-year (millions)	0.60	741	2,353
Surface area (thousand sq. km)	2.2	24,265	29,265
Population growth (%)	2.1	2.1	1.8
Urban population (% of total population)	37	35	30
GNI (Atlas method, US$ billions)	0.4	552	1,364
GNI per capita (Atlas method, US$)	650	745	580
GNI per capita (PPP, international $)	2,000	1,981	2,486
GDP growth (%)	4.2	5.3	7.5
GDP per capita growth (%)	2.1	3.1	5.6
(most recent estimate, 2000–2005)			
Poverty headcount ratio at $1 a day (PPP, %)	..	44	..
Poverty headcount ratio at $2 a day (PPP, %)	..	75	..
Life expectancy at birth (years)	63	46	59
Infant mortality (per 1,000 live births)	52	100	80
Child malnutrition (% of children under 5)	25	29	39
Adult literacy, male (% of ages 15 and older)	..	..	73
Adult literacy, female (% of ages 15 and older)	..	..	50
Gross primary enrollment, male (% of age group)	91	99	110
Gross primary enrollment, female (% of age group)	80	87	99
Access to an improved water source (% of population)	86	56	75
Access to improved sanitation facilities (% of population)	33	37	38





Net Aid Flows	1980	1990	2000	2005 [a]
(US$ millions)				
Net ODA and official aid	43	45	19	25
Top 3 donors (in 2004):				
France	12	24	11	13
Canada	0	0	*0*	0
Belgium	1	0	0	0
Aid (% of GNI)	34.9	18.2	9.3	6.8
Aid per capita (US$)	129	104	35	42



Long-Term Economic Trends					1980–90	1990–2000	2000–05
					(average annual growth %)		
Consumer prices (annual % change)	..	-7.4	*5.9*	3.6			
GDP implicit deflator (annual % change)	*14.6*	2.2	3.8	2.3			
Exchange rate (annual average, local per US$)	211.3	272.3	534.0	395.6			
Terms of trade index (2000 = 100)	*0*	117	100	80			
Population, mid-year (millions)	0.3	0.4	0.5	0.6	2.6	2.2	2.1
GDP (US$ millions)	124	250	202	387	2.8	1.2	2.6
		(% of GDP)					
Agriculture	34.0	41.4	48.6	51.0	4.0	2.6	3.5
Industry	13.2	8.3	11.5	11.0	-2.9	3.9	2.5
Manufacturing	3.9	4.2	4.5	4.4	4.9	1.7	1.7
Services	52.8	50.3	39.9	38.0	3.1	-0.6	1.4
Household final consumption expenditure	79.2	78.7	89.1	100.7	3.0	3.8	4.8
General gov't final consumption expenditure	30.9	24.5	13.4	12.2	1.8	-4.1	-0.9
Gross capital formation	33.2	19.7	13.2	9.3	-4.2	-4.9	0.6
Exports of goods and services	8.7	14.3	16.7	12.5	9.3	-1.8	-3.3
Imports of goods and services	51.9	37.1	32.5	34.7	-0.2	-1.1	4.2
Gross savings	..	-1.3	11.2	5.1	..	..	..

Note: Figures in italics are for years other than those specified. 2005 data are preliminary estimates. .. indicates data are not available.
a. Aid data are for 2004.

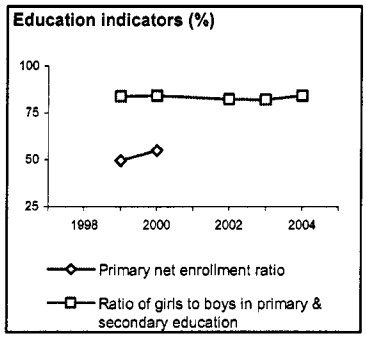
Development Economics, Development Data Group (DECDG).

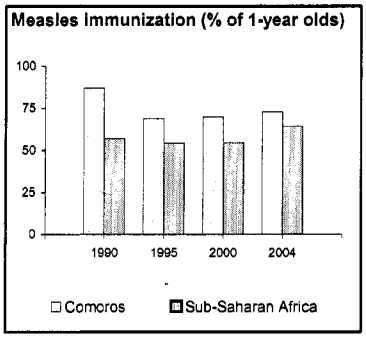
Millennium Development Goals

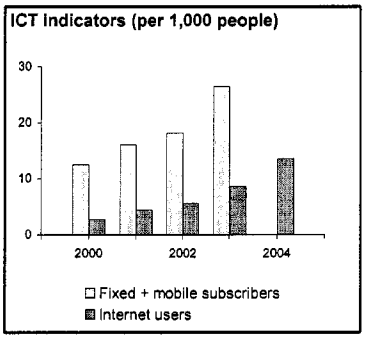
Comoros

With selected targets to achieve between 1990 and 2015
(estimate closest to date shown, +/- 2 years)

	Comoros			
Goal 1: halve the rates for $1 a day poverty and malnutrition	**1990**	**1995**	**2000**	**2004**
Poverty headcount ratio at $1 a day (PPP, % of population)	..	..	..	..
Poverty headcount ratio at national poverty line (% of population)	..	..	..	..
Share of income or consumption to the poorest quintile (%)	..	..	..	..
Prevalence of malnutrition (% of children under 5)	*19*	*26*	25	..
Goal 2: ensure that children are able to complete primary schooling				
Primary school enrollment (net, %)	*57*	..	55	..
Primary completion rate (% of relevant age group)	*32*	*34*	*39*	50
Secondary school enrollment (gross, %)	*18*	..	24	35
Youth literacy rate (% of people ages 15-24)	*57*	..	..	..
Goal 3: eliminate gender disparity in education and empower women				
Ratio of girls to boys in primary and secondary education (%)	*71*	..	84	84
Women employed in the nonagricultural sector (% of nonagricultural employment)	17	..	..	..
Proportion of seats held by women in national parliament (%)	0	*0*	*0*	*3*
Goal 4: reduce under-5 mortality by two-thirds				
Under-5 mortality rate (per 1,000)	120	100	82	70
Infant mortality rate (per 1,000 live births)	88	74	61	52
Measles immunization (proportion of one-year olds immunized, %)	87	69	70	73
Goal 5: reduce maternal mortality by three-fourths				
Maternal mortality ratio (modeled estimate, per 100,000 live births)	..	..	480	..
Births attended by skilled health staff (% of total)	..	*52*	62	..
Goal 6: halt and begin to reverse the spread of HIV/AIDS and other major diseases				
Prevalence of HIV (% of population ages 15-49)	..	..	..	*0.1*
Contraceptive prevalence (% of women ages 15-49)	..	*21*	26	..
Incidence of tuberculosis (per 100,000 people)	88	..	..	46
Tuberculosis cases detected under DOTS (%)	..	54	50	39
Goal 7: halve the proportion of people without sustainable access to basic needs				
Access to an improved water source (% of population)	93	..	..	86
Access to improved sanitation facilities (% of population)	32	..	..	33
Forest area (% of total land area)	5.4	..	3.6	*2.2*
Nationally protected areas (% of total land area)	..	..	..	..
CO2 emissions (metric tons per capita)	0.2	0.1	0.2	*0.1*
GDP per unit of energy use (constant 2000 PPP $ per kg of oil equivalent)	..	..	..	..
Goal 8: develop a global partnership for development				
Fixed line and mobile phone subscribers (per 1,000 people)	8	9	13	*26*
Internet users (per 1,000 people)	0	*0*	3	14
Personal computers (per 1,000 people)	0	0	6	9
Youth unemployment (% of total labor force ages 15-24)	..	..	..	..







Note: Figures in italics are for years other than those specified. .. indicates data are not available.

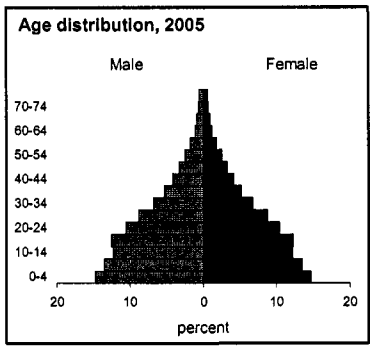
11/6/06

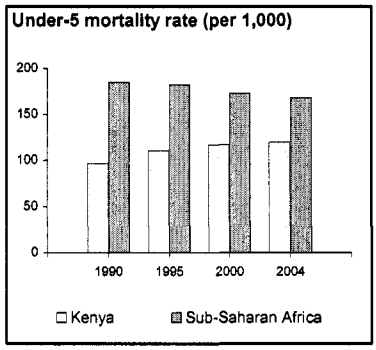
Development Economics, Development Data Group (DECDG).

Kenya at a glance

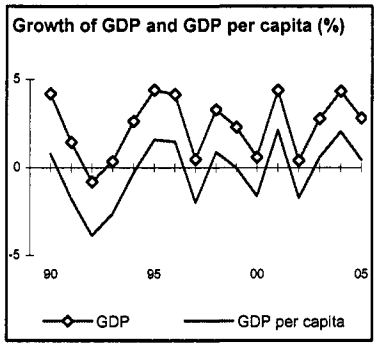
9/14/06

Key Development Indicators *(2005)*	Kenya	Sub-Saharan Africa	Low income
Population, mid-year (millions)	34.3	741	2,353
Surface area (thousand sq. km)	580	24,265	29,265
Population growth (%)	2.3	2.1	1.8
Urban population (% of total population)	21	35	30
GNI (Atlas method, US$ billions)	18.0	552	1,364
GNI per capita (Atlas method, US$)	530	745	580
GNI per capita (PPP, international $)	1,170	1,981	2,486
GDP growth (%)	2.8	5.3	7.5
GDP per capita growth (%)	0.4	3.1	5.6
(most recent estimate, 2000–2005)			
Poverty headcount ratio at $1 a day (PPP, %)	23 [a]	44	..
Poverty headcount ratio at $2 a day (PPP, %)	56 [a]	75	..
Life expectancy at birth (years)	48	46	59
Infant mortality (per 1,000 live births)	79	100	80
Child malnutrition (% of children under 5)	20	29	39
Adult literacy, male (% of ages 15 and older)	78	..	73
Adult literacy, female (% of ages 15 and older)	70	..	50
Gross primary enrollment, male (% of age group)	114	99	110
Gross primary enrollment, female (% of age group)	108	87	99
Access to an improved water source (% of population)	61	56	75
Access to improved sanitation facilities (% of population)	43	37	38





Net Aid Flows	**1980**	**1990**	**2000**	**2005** [b]
(US$ millions)				
Net ODA and official aid	397	1,186	512	635
Top 3 donors (in 2004):				
United States	39	95	46	141
Japan	27	93	67	71
United Kingdom	39	67	73	46
Aid (% of GNI)	5.6	14.4	4.1	4.0
Aid per capita (US$)	24	51	17	19



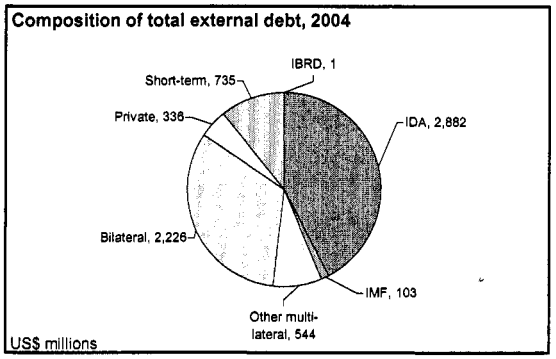
Long-Term Economic Trends					**1980–90**	**1990–2000**	**2000–05**
					(average annual growth %)		
Consumer prices (annual % change)	13.9	17.8	10.0	10.3			
GDP implicit deflator (annual % change)	9.6	10.6	6.1	3.7			
Exchange rate (annual average, local per US$)	7.4	22.9	76.2	75.6			
Terms of trade index (2000 = 100)	77	84	100	92			
Population, mid-year (millions)	16.3	23.4	30.7	34.3	3.6	2.7	2.2
GDP (US$ millions)	7,265	8,591	12,705	17,977	4.2	2.2	2.8
		(% of GDP)					
Agriculture	32.6	29.5	32.4	27.4	3.3	1.9	1.6
Industry	20.8	19.0	16.9	17.8	3.9	1.2	3.3
Manufacturing	12.8	11.7	11.6	12.4	4.9	1.3	2.5
Services	46.6	51.4	50.7	54.9	4.9	3.2	3.0
Household final consumption expenditure	62.1	62.8	75.5	69.8	4.5	3.6	3.0
General gov't final consumption expenditure	19.8	18.6	15.1	11.0	2.6	6.9	1.9
Gross capital formation	24.5	24.2	17.4	25.4	0.4	6.1	3.0
Exports of goods and services	29.5	25.7	21.6	24.7	4.4	1.0	5.6
Imports of goods and services	35.9	31.3	29.6	30.9	1.9	9.4	5.1
Gross savings	15.4	18.6	15.2	23.6	2.4	*0.2*	*4.2*

Note: Figures in italics are for years other than those specified. 2005 data are preliminary estimates. .. indicates data are not available.
a. Country poverty estimate is for 1997. b. Aid data are for 2004.

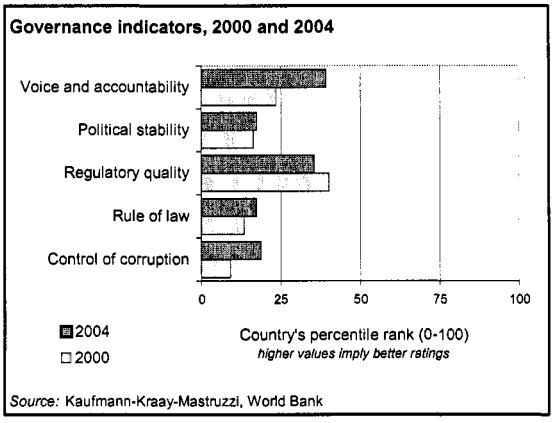
Balance of Payments and Trade	2000	2005
(US$ millions)		
Total merchandise exports (fob)	1,773	2,820
Total merchandise imports (cif)	3,033	5,065
Net trade in goods and services	-1,015	-1,729
Workers' remittances and compensation of employees (receipts)	538	*494*
Current account balance	..	..
as a % of GDP	-2.2	-6.0
Reserves, including gold	897	2,043

Central Government Finance		
(% of GDP)		
Revenue	22.6	*19.6*
Tax revenue	18.8	*17.2*
Expense	19.5	*20.6*
Cash surplus/deficit	2.1	*-2.4*
Highest marginal tax rate (%)		
Individual	30	*30*
Corporate	30	*30*

External Debt and Resource Flows		
(US$ millions)		
Total debt outstanding and disbursed	6,145	*6,826*
Total debt service	591	*364*
HIPC and MDRI debt relief (expected; flow)	–	–
Total debt (% of GDP)	48.4	*42.4*
Total debt service (% of exports)	21.2	*8.5*
Foreign direct investment (net inflows)	111	*46*
Portfolio equity (net inflows)	-6	*3*



Private Sector Development	2000	2005
Time required to start a business (days)	–	54
Cost to start a business (% of GNI per capita)	–	48.2
Time required to register property (days)	–	73
Ranked as a major constraint to business (% of managers surveyed who agreed)		
Corruption	..	*73.8*
Cost of financing	..	*73.3*
Stock market capitalization (% of GDP)	10.1	35.5
Bank branches (per 100,000 people)	..	*1.4*



Technology and Infrastructure	2000	2004
Paved roads (% of total)	12.1	..
Fixed line and mobile phone subscribers (per 1,000 people)	14	85
High technology exports (% of manufactured exports)	3.9	3.1

Environment		
Agricultural land (% of land area)	46	*47*
Forest area (% of land area, 2000 and 2005)	6.3	6.2
Nationally protected areas (% of land area)	..	8.0
Freshwater resources per capita (cu. meters)	..	619
Freshwater withdrawal (% of internal resources)	..	*7.6*
CO2 emissions per capita (mt)	0.31	*0.22*
GDP per unit of energy use (2000 PPP $ per kg of oil equivalent)	2.0	*2.1*
Energy use per capita (kg of oil equivalent)	507	*494*

World Bank Group portfolio	2000	2005
(US$ millions)		
IBRD		
Total debt outstanding and disbursed	47	0
Disbursements	0	0
Principal repayments	40	1
Interest payments	7	0
IDA		
Total debt outstanding and disbursed	2,262	2,663
Disbursements	170	34
Total debt service	45	77
IFC *(fiscal year)*		
Total disbursed and outstanding portfolio	99	*105*
of which IFC own account	99	*87*
Disbursements for IFC own account	40	*11*
Portfolio sales, prepayments and repayments for IFC own account	14	*13*
MIGA		
Gross exposure	42	45
New guarantees	37	0

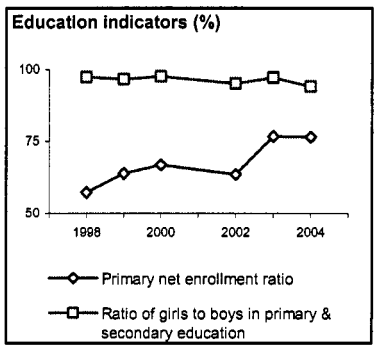
Note: Figures in italics are for years other than those specified. 2005 data are preliminary estimates. 8/12/06
.. indicates data are not available. – indicates observation is not applicable.

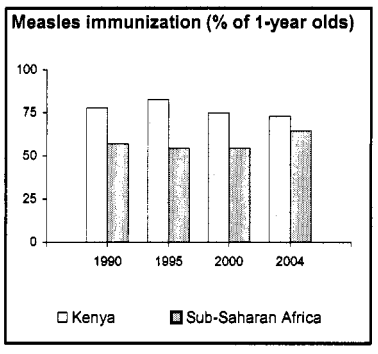
Millennium Development Goals

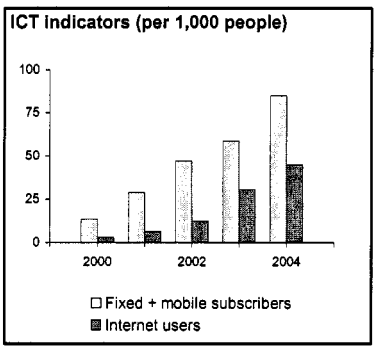
Kenya

With selected targets to achieve between 1990 and 2015
(estimate closest to date shown, +/- 2 years)

	Kenya			
Goal 1: halve the rates for $1 a day poverty and malnutrition	**1990**	**1995**	**2000**	**2004**
Poverty headcount ratio at $1 a day (PPP, % of population)	*33.5*	*22.8*	..	..
Poverty headcount ratio at national poverty line (% of population)	..	*52.0*	..	..
Share of income or consumption to the poorest quintile (%)	..	*6.0*	..	..
Prevalence of malnutrition (% of children under 5)	..	*23*	21	*20*
Goal 2: ensure that children are able to complete primary schooling				
Primary school enrollment (net, %)	..	..	67	76
Primary completion rate (% of relevant age group)	..	..	..	92
Secondary school enrollment (gross, %)	*28*	..	39	48
Youth literacy rate (% of people ages 15-24)	..	..	..	80
Goal 3: eliminate gender disparity in education and empower women				
Ratio of girls to boys in primary and secondary education (%)	*94*	..	98	94
Women employed in the nonagricultural sector (% of nonagricultural employment)	21	27	34	*39*
Proportion of seats held by women in national parliament (%)	1	*3*	4	*7*
Goal 4: reduce under-5 mortality by two-thirds				
Under-5 mortality rate (per 1,000)	97	111	117	120
Infant mortality rate (per 1,000 live births)	64	72	77	79
Measles immunization (proportion of one-year olds immunized, %)	78	83	75	73
Goal 5: reduce maternal mortality by three-fourths				
Maternal mortality ratio (modeled estimate, per 100,000 live births)	..	..	1,000	..
Births attended by skilled health staff (% of total)	*50*	*45*	*44*	*42*
Goal 6: halt and begin to reverse the spread of HIV/AIDS and other major diseases				
Prevalence of HIV (% of population ages 15-49)	..	..	..	*6.1*
Contraceptive prevalence (% of women ages 15-49)	*27*	*33*	*39*	*39*
Incidence of tuberculosis (per 100,000 people)	108	..	..	619
Tuberculosis cases detected under DOTS (%)	..	56	46	46
Goal 7: halve the proportion of people without sustainable access to basic needs				
Access to an improved water source (% of population)	45	..	..	61
Access to improved sanitation facilities (% of population)	40	..	..	43
Forest area (% of total land area)	6.5	..	6.3	*6.2*
Nationally protected areas (% of total land area)	..	..	..	8.0
CO2 emissions (metric tons per capita)	0.2	0.3	0.3	*0.2*
GDP per unit of energy use (constant 2000 PPP $ per kg of oil equivalent)	2.2	*2.2*	2.0	*2.1*
Goal 8: develop a global partnership for development				
Fixed line and mobile phone subscribers (per 1,000 people)	7	10	14	85
Internet users (per 1,000 people)	0	0	3	45
Personal computers (per 1,000 people)	0	1	5	13
Youth unemployment (% of total labor force ages 15-24)	..	..	..	..







Note: Figures in italics are for years other than those specified. .. indicates data are not available.

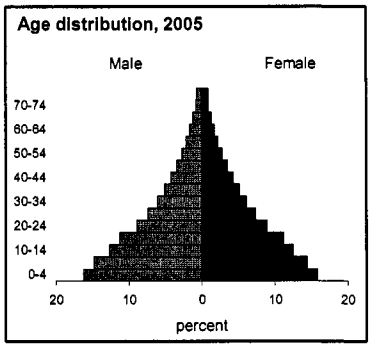
8/12/06

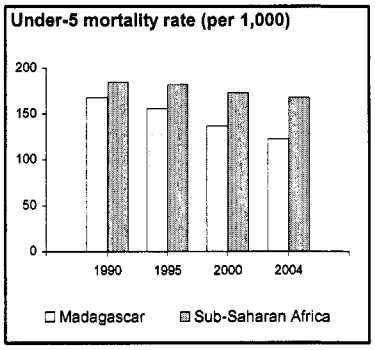
Development Economics, Development Data Group (DECDG).

Madagascar at a glance

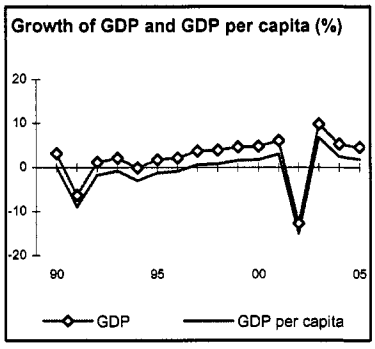
12/21/06

Key Development Indicators *(2005)*	Madagascar	Sub-Saharan Africa	Low income
Population, mid-year (millions)	18.6	741	2,353
Surface area (thousand sq. km)	587	24,265	29,265
Population growth (%)	2.7	2.1	1.8
Urban population (% of total population)	27	35	30
GNI (Atlas method, US$ billions)	5.4	552	1,364
GNI per capita (Atlas method, US$)	290	745	580
GNI per capita (PPP, international $)	880	1,981	2,486
GDP growth (%)	4.6	5.3	7.5
GDP per capita growth (%)	1.8	3.1	5.6
(most recent estimate, 2000–2005)			
Poverty headcount ratio at $1 a day (PPP, %)	61	44	..
Poverty headcount ratio at $2 a day (PPP, %)	85	75	..
Life expectancy at birth (years)	56	46	59
Infant mortality (per 1,000 live births)	76	100	80
Child malnutrition (% of children under 5)	42	29	39
Adult literacy, male (% of ages 15 and older)	77	..	73
Adult literacy, female (% of ages 15 and older)	65	..	50
Gross primary enrollment, male (% of age group)	136	99	110
Gross primary enrollment, female (% of age group)	131	87	99
Access to an improved water source (% of population)	31	56	75
Access to improved sanitation facilities (% of population)	32	37	38





Net Aid Flows	**1980**	**1990**	**2000**	**2005** [a]
(US$ millions)				
Net ODA and official aid	230	398	322	1,236
Top 3 donors (in 2004):				
France	54	143	46	485
Italy	0	6	1	43
United States	*10*	22	32	41
Aid (% of GNI)	5.7	13.5	8.5	28.8
Aid per capita (US$)	25	33	20	68



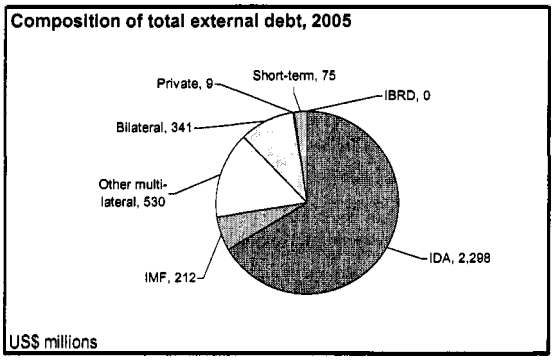
Long-Term Economic Trends					**1980–90**	**1990–2000**	**2000–05**
					(average annual growth %)		
Consumer prices (annual % change)	18.2	11.8	10.7	18.4			
GDP implicit deflator (annual % change)	15.0	11.5	7.2	18.3			
Exchange rate (annual average, local per US$)	42.3	298.8	1,353.5	2,003.0			
Terms of trade index (2000 = 100)	..	87	100	46			
Population, mid-year (millions)	9.1	12.0	16.2	18.6	2.8	3.0	2.8
GDP (US$ millions)	4,042	3,081	3,866	5,033	1.1	2.0	2.0
		(% of GDP)					
Agriculture	30.1	28.6	29.1	28.1	2.5	1.8	1.7
Industry	16.1	12.8	14.5	15.9	0.9	2.4	1.5
Manufacturing	..	11.2	12.3	14.1	*2.1*	2.0	2.7
Services	53.9	58.6	56.4	56.0	0.3	2.4	1.5
Household final consumption expenditure	89.3	86.4	85.5	84.2	-0.7	2.3	2.9
General gov't final consumption expenditure	12.1	8.0	6.8	8.1	0.5	0.0	3.6
Gross capital formation	15.0	17.0	15.0	22.4	4.9	3.4	13.3
Exports of goods and services	13.3	16.6	30.7	25.6	-0.8	3.9	-2.5
Imports of goods and services	29.7	28.0	38.0	40.3	-5.7	4.3	10.3
Gross savings	-2.4	9.2	9.4	10.9	51.5	7.5	*11.3*

Note: Figures in italics are for years other than those specified. 2005 data are preliminary estimates. .. indicates data are not available.
a. Aid data are for 2004.

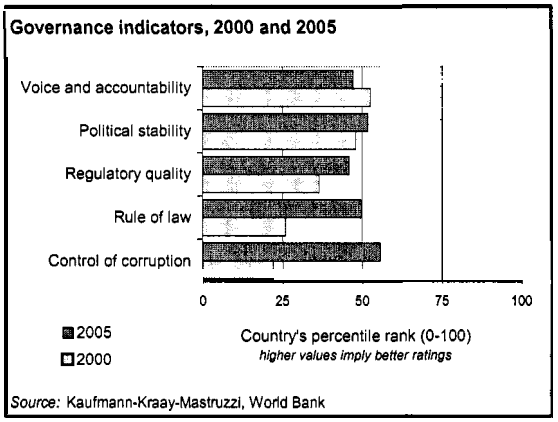
Balance of Payments and Trade	2000	2005
(US$ millions)		
Total merchandise exports (fob)	829	788
Total merchandise imports (cif)	1,097	1,617
Net trade in goods and services	-283	-739
Workers' remittances and compensation of employees (receipts)	11	*16*
Current account balance	-218	568
as a % of GDP	-5.6	-11.3
Reserves, including gold	288	495

Central Government Finance		
(% of GDP)		
Revenue	11.7	10.9
Tax revenue	11.2	10.1
Expense	18.1	21.0
Cash surplus/deficit	-10.2	-10.1
Highest marginal tax rate (%)		
Individual		
Corporate		

External Debt and Resource Flows		
(US$ millions)		
Total debt outstanding and disbursed	4,691	3,465
Total debt service	117	78
HIPC and MDRI debt relief (expected; flow)	1,900	
Total debt (% of GDP)	121.0	68.8
Total debt service (% of exports)	9.7	5.4
Foreign direct investment (net inflows)	83	29
Portfolio equity (net inflows)	0	0



Private Sector Development	2000	2006
Time required to start a business (days)	–	21
Cost to start a business (% of GNI per capita)	–	35.0
Time required to register property (days)	–	134
Ranked as a major constraint to business (% of managers surveyed who agreed)		
Cost of financing	..	*66.9*
Macroeconomic instability	..	*64.4*
Stock market capitalization (% of GDP)		
Bank branches (per 100,000 people)		*0.7*



Technology and Infrastructure	2000	2004
Paved roads (% of total)	*11.6*	
Fixed line and mobile phone subscribers (per 1,000 people)	7	*19*
High technology exports (% of manufactured exports)	1.0	0.8

Environment		
Agricultural land (% of land area)	47	*47*
Forest area (% of land area, 2000 and 2005)	22.4	22.1
Nationally protected areas (% of land area)		4.3
Freshwater resources per capita (cu. meters)		18,606
Freshwater withdrawal (% of internal resources)		*4.4*
CO2 emissions per capita (mt)	0.14	*0.13*
GDP per unit of energy use (2000 PPP $ per kg of oil equivalent)		
Energy use per capita (kg of oil equivalent)		

World Bank Group portfolio	2000	2005
(US$ millions)		
IBRD		
Total debt outstanding and disbursed	0	0
Disbursements	0	0
Principal repayments	0	0
Interest payments	0	0
IDA		
Total debt outstanding and disbursed	1,378	2,298
Disbursements	94	221
Total debt service	27	29
IFC *(fiscal year)*		
Total disbursed and outstanding portfolio	8	6
of which IFC own account	8	6
Disbursements for IFC own account	1	0
Portfolio sales, prepayments and repayments for IFC own account	2	1
MIGA		
Gross exposure	1	1
New guarantees	0	0

Note: Figures in italics are for years other than those specified. 2005 data are preliminary estimates.
.. indicates data are not available. – indicates observation is not applicable.

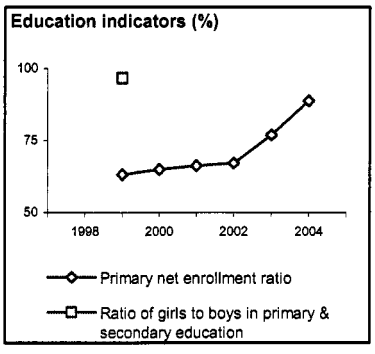
12/21/06

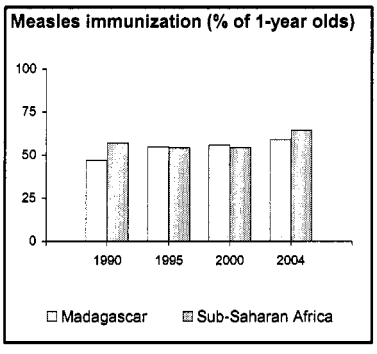
Millennium Development Goals

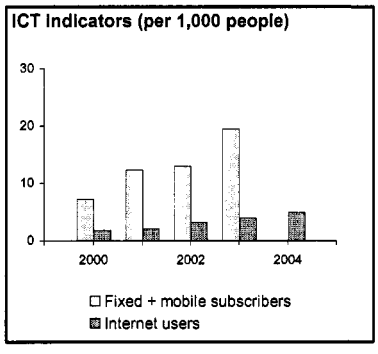
Madagascar

With selected targets to achieve between 1990 and 2015
(estimate closest to date shown, +/- 2 years)

	Madagascar			
Goal 1: halve the rates for $1 a day poverty and malnutrition	**1990**	**1995**	**2000**	**2004**
Poverty headcount ratio at $1 a day (PPP, % of population)	..	*46.3*	*61.0*	..
Poverty headcount ratio at national poverty line (% of population)	..	*73.3*	*71.3*	..
Share of income or consumption to the poorest quintile (%)	..	..	*4.9*	..
Prevalence of malnutrition (% of children under 5)	*41*	34	..	42
Goal 2: ensure that children are able to complete primary schooling				
Primary school enrollment (net, %)	*64*	..	65	89
Primary completion rate (% of relevant age group)	35	28	36	45
Secondary school enrollment (gross, %)	*17*	..	*14*	..
Youth literacy rate (% of people ages 15-24)	..	..	..	70
Goal 3: eliminate gender disparity in education and empower women				
Ratio of girls to boys in primary and secondary education (%)	*98*	..	*97*	..
Women employed in the nonagricultural sector (% of nonagricultural employment)	24	..	..	..
Proportion of seats held by women in national parliament (%)	7	*4*	8	*7*
Goal 4: reduce under-5 mortality by two-thirds				
Under-5 mortality rate (per 1,000)	168	156	137	123
Infant mortality rate (per 1,000 live births)	103	95	84	76
Measles immunization (proportion of one-year olds immunized, %)	47	55	56	59
Goal 5: reduce maternal mortality by three-fourths				
Maternal mortality ratio (modeled estimate, per 100,000 live births)	..	..	550	..
Births attended by skilled health staff (% of total)	*57*	*47*	46	51
Goal 6: halt and begin to reverse the spread of HIV/AIDS and other major diseases				
Prevalence of HIV (% of population ages 15-49)	..	..	..	*0.5*
Contraceptive prevalence (% of women ages 15-49)	*17*	*19*	19	27
Incidence of tuberculosis (per 100,000 people)	192	..	..	218
Tuberculosis cases detected under DOTS (%)	..	51	*70*	74
Goal 7: halve the proportion of people without sustainable access to basic needs				
Access to an improved water source (% of population)	40	..	..	31
Access to improved sanitation facilities (% of population)	14	..	..	32
Forest area (% of total land area)	23.5	..	22.4	*22.1*
Nationally protected areas (% of total land area)	..	..	..	4.3
CO2 emissions (metric tons per capita)	0.1	0.1	0.1	*0.1*
GDP per unit of energy use (constant 2000 PPP $ per kg of oil equivalent)	..	..	..	..
Goal 8: develop a global partnership for development				
Fixed line and mobile phone subscribers (per 1,000 people)	3	3	7	*19*
Internet users (per 1,000 people)	0	*0*	2	5
Personal computers (per 1,000 people)	..	*1*	2	5
Youth unemployment (% of total labor force ages 15-24)	..	..	..	..







Note: Figures in italics are for years other than those specified. .. indicates data are not available.

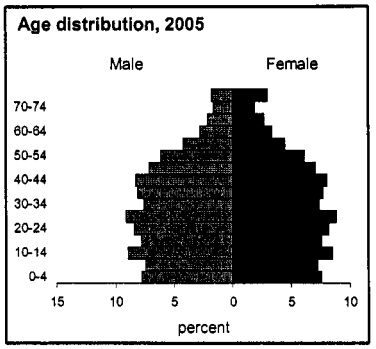
12/21/06

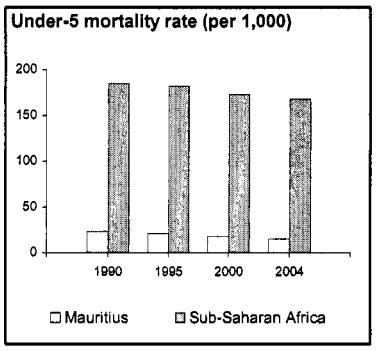
Development Economics, Development Data Group (DECDG).

Mauritius at a glance

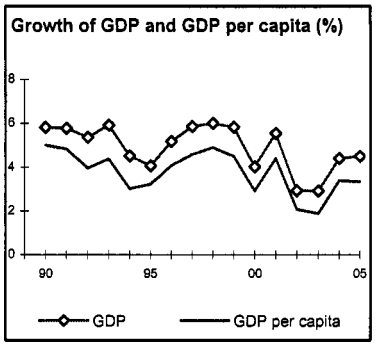
9/14/06

Key Development Indicators	Mauritius	Sub-Saharan Africa	Upper middle income
(2005)			
Population, mid-year (millions)	1.2	741	599
Surface area (thousand sq. km)	2.0	24,265	30,135
Population growth (%)	1.1	2.1	0.4
Urban population (% of total population)	42	35	72
GNI (Atlas method, US$ billions)	6.5	552	3,368
GNI per capita (Atlas method, US$)	5,200	745	5,625
GNI per capita (PPP, international $)	12,450	1,981	10,924
GDP growth (%)	4.5	5.3	5.5
GDP per capita growth (%)	3.3	3.1	5.0
(most recent estimate, 2000–2005)			
Poverty headcount ratio at $1 a day (PPP, %)	..	44	..
Poverty headcount ratio at $2 a day (PPP, %)	..	75	..
Life expectancy at birth (years)	73	46	69
Infant mortality (per 1,000 live births)	14	100	23
Child malnutrition (% of children under 5)	..	29	7
Adult literacy, male (% of ages 15 and older)	88	..	95
Adult literacy, female (% of ages 15 and older)	81	..	92
Gross primary enrollment, male (% of age group)	102	99	108
Gross primary enrollment, female (% of age group)	102	87	106
Access to an improved water source (% of population)	100	56	94
Access to improved sanitation facilities (% of population)	94	37	84





Net Aid Flows	**1980**	**1990**	**2000**	**2005** [a]
(US$ millions)				
Net ODA and official aid	33	89	20	38
Top 3 donors (in 2004):				
France	13	32	9	12
Japan	1	7	2	2
Luxembourg	..	0	1	1
Aid (% of GNI)	2.9	3.8	0.5	0.6
Aid per capita (US$)	34	84	17	31



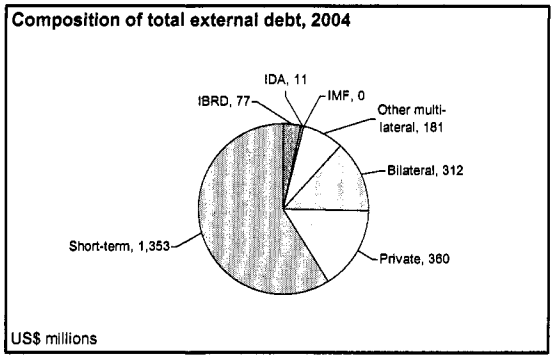
Long-Term Economic Trends					**1980–90**	**1990–2000**	**2000–05**
					(average annual growth %)		
Consumer prices (annual % change)	42.0	13.5	4.2	4.9			
GDP implicit deflator (annual % change)	*10.6*	10.6	3.6	5.6			
Exchange rate (annual average, local per US$)	7.1	15.4	25.5	28.9			
Terms of trade index (2000 = 100)	..	104	100	92			
Population, mid-year (millions)	1.0	1.1	1.2	1.2	0.9	1.2	1.0
GDP (US$ millions)	1,153	2,383	4,465	6,309	6.0	5.2	3.9
		(% of GDP)					
Agriculture	16.5	13.1	6.0	6.1	2.6	-0.5	1.9
Industry	26.3	33.1	31.2	28.2	9.2	5.5	1.9
Manufacturing	15.7	24.7	23.7	20.3	10.4	5.3	0.6
Services	57.2	53.8	62.8	65.7	5.1	6.4	5.7
Household final consumption expenditure	71.0	63.7	63.0	66.6	5.4	5.4	3.0
General gov't final consumption expenditure	14.4	12.8	13.1	14.3	3.3	4.8	4.5
Gross capital formation	25.4	30.7	25.9	23.3	10.3	4.7	4.6
Exports of goods and services	46.8	64.2	62.7	56.4	10.2	5.4	1.8
Imports of goods and services	57.6	71.4	64.7	60.6	10.3	5.2	1.4
Gross savings	14.0	26.3	25.3	19.9	*11.1*	5.7	*3.1*

Note: Figures in italics are for years other than those specified. 2005 data are preliminary estimates. .. indicates data are not available.
a. Aid data are for 2004.

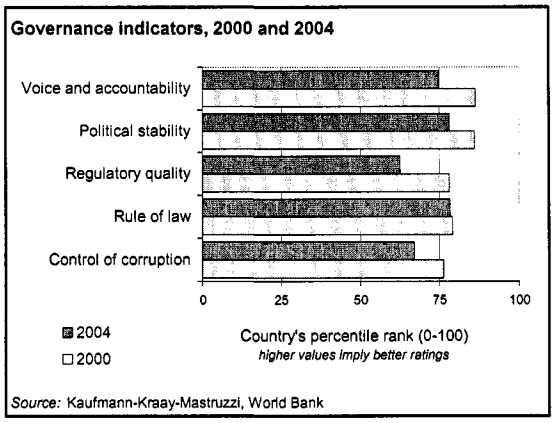
Balance of Payments and Trade	**2000**	**2005**
(US$ millions)		
Total merchandise exports (fob)	1,523	2,007
Total merchandise imports (cif)	2,158	2,919
Net trade in goods and services	-130	-269
Workers' remittances and compensation of employees (receipts)	177	*215*
Current account balance	-69	-217
as a % of GDP	-1.5	-3.4
Reserves, including gold	688	1,485

Central Government Finance [b.]		
(% of GDP)		
Current Revenues	20.5	19.5
Tax revenue	18.1	17.9
Current Expenditure	20.5	20.5
Overall surplus/deficit	-3.8	-5.2
Highest marginal tax rate (%)		
Individual	25	*25*
Corporate	*25*	*25*

External Debt and Resource Flows		
(US$ millions)		
Total debt outstanding and disbursed	1,720	*2,294*
Total debt service	485	*260*
HIPC and MDRI debt relief (expected; flow)	–	–
Total debt (% of GDP)	38.5	*38.0*
Total debt service (% of exports)	17.2	*7.2*
Foreign direct investment (net inflows)	266	*14*
Portfolio equity (net inflows)	-4	*19*



Private Sector Development	**2000**	**2005**
Time required to start a business (days)	–	46
Cost to start a business (% of GNI per capita)	–	8.8
Time required to register property (days)	–	210
Ranked as a major constraint to business (% of managers surveyed who agreed)		
n.a.	..	..
n.a.	..	..
Stock market capitalization (% of GDP)	29.8	41.5
Bank branches (per 100,000 people)	..	*11.9*



Technology and Infrastructure	**2000**	**2004**
Paved roads (% of total)	97.0	*100.0*
Fixed line and mobile phone subscribers (per 1,000 people)	388	700
High technology exports (% of manufactured exports)	1.0	4.5

Environment		
Agricultural land (% of land area)	56	*56*
Forest area (% of land area, 2000 and 2005)	18.7	18.2
Nationally protected areas (% of land area)	..	..
Freshwater resources per capita (cu. meters)	..	2,229
Freshwater withdrawal (% of internal resources)	..	*22.2*
CO2 emissions per capita (mt)	2.4	*2.6*
GDP per unit of energy use (2000 PPP $ per kg of oil equivalent)	..	..
Energy use per capita (kg of oil equivalent)	..	..

World Bank Group portfolio	**2000**	**2005**
(US$ millions)		
IBRD		
Total debt outstanding and disbursed	86	68
Disbursements	4	2
Principal repayments	18	9
Interest payments	5	2
IDA		
Total debt outstanding and disbursed	14	10
Disbursements	0	0
Total debt service	1	1
IFC *(fiscal year)*		
Total disbursed and outstanding portfolio	6	*0*
of which IFC own account	6	*0*
Disbursements for IFC own account	0	*0*
Portfolio sales, prepayments and repayments for IFC own account	3	*0*
MIGA		
Gross exposure	–	–
New guarantees	–	–

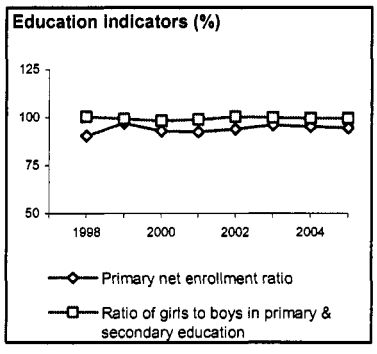
Note: Figures in italics are for years other than those specified. 2005 data are preliminary estimates. 8/12/06
.. indicates data are not available. – indicates observation is not applicable.
b. Revenues refer to current revenues excluding current grants; expenses refer to current expenditures; and, deficit refers to deficit after total grants.

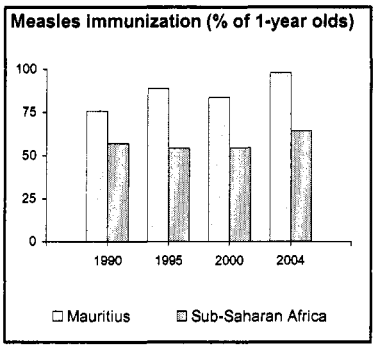
Millennium Development Goals

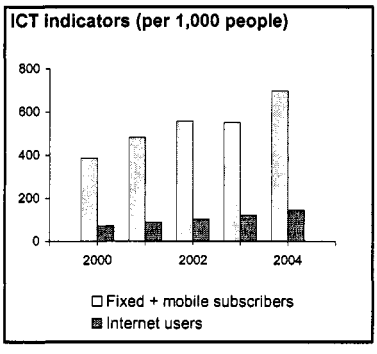
Mauritius

With selected targets to achieve between 1990 and 2015
(estimate closest to date shown, +/- 2 years)

	Mauritius			
Goal 1: halve the rates for $1 a day poverty and malnutrition	**1990**	**1995**	**2000**	**2004**
Poverty headcount ratio at $1 a day (PPP, % of population)	..	..	..	..
Poverty headcount ratio at national poverty line (% of population)	..	..	..	..
Share of income or consumption to the poorest quintile (%)	..	..	..	..
Prevalence of malnutrition (% of children under 5)	..	15	..	..
Goal 2: ensure that children are able to complete primary schooling				
Primary school enrollment (net, %)	*91*	..	93	*95*
Primary completion rate (% of relevant age group)	64	98	105	*97*
Secondary school enrollment (gross, %)	*55*	..	78	*88*
Youth literacy rate (% of people ages 15-24)	91	..	..	95
Goal 3: eliminate gender disparity in education and empower women				
Ratio of girls to boys in primary and secondary education (%)	*102*	..	98	*100*
Women employed in the nonagricultural sector (% of nonagricultural employment)	37	36	39	35
Proportion of seats held by women in national parliament (%)	7	*8*	8	*6*
Goal 4: reduce under-5 mortality by two-thirds				
Under-5 mortality rate (per 1,000)	23	21	18	15
Infant mortality rate (per 1,000 live births)	20	20	16	14
Measles immunization (proportion of one-year olds immunized, %)	76	89	84	98
Goal 5: reduce maternal mortality by three-fourths				
Maternal mortality ratio (modeled estimate, per 100,000 live births)	..	..	24	..
Births attended by skilled health staff (% of total)	91	98	100	99
Goal 6: halt and begin to reverse the spread of HIV/AIDS and other major diseases				
Prevalence of HIV (% of population ages 15-49)	..	..	..	*0.6*
Contraceptive prevalence (% of women ages 15-49)	*75*	..	*26*	*76*
Incidence of tuberculosis (per 100,000 people)	68	..	..	64
Tuberculosis cases detected under DOTS (%)	..	34	33	33
Goal 7: halve the proportion of people without sustainable access to basic needs				
Access to an improved water source (% of population)	100	..	..	100
Access to improved sanitation facilities (% of population)	..	..	..	94
Forest area (% of total land area)	19.2	..	18.7	*18.2*
Nationally protected areas (% of total land area)	..	..	..	..
CO2 emissions (metric tons per capita)	1.4	1.6	2.4	*2.6*
GDP per unit of energy use (constant 2000 PPP $ per kg of oil equivalent)	..	..	..	..
Goal 8: develop a global partnership for development				
Fixed line and mobile phone subscribers (per 1,000 people)	55	143	388	700
Internet users (per 1,000 people)	0	*2*	73	146
Personal computers (per 1,000 people)	4	32	101	279
Youth unemployment (% of total labor force ages 15-24)	..	..	..	..







Note: Figures in italics are for years other than those specified. .. indicates data are not available.

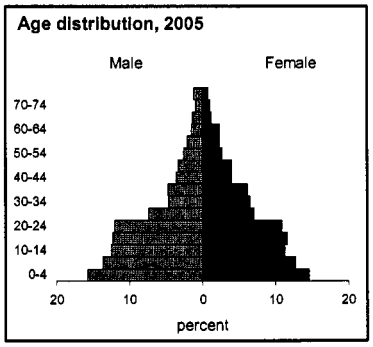
8/12/06

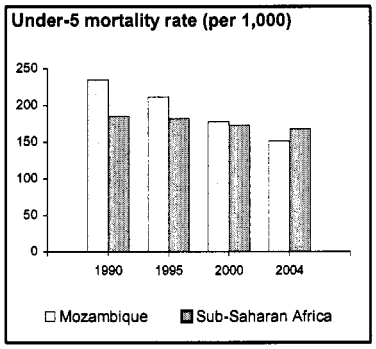
Development Economics, Development Data Group (DECDG).

Mozambique at a glance

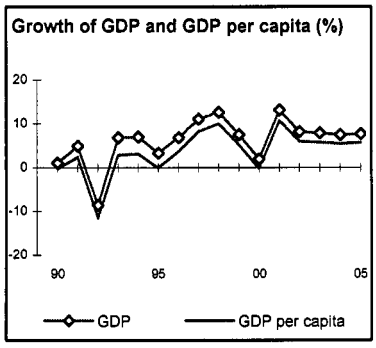
9/14/06

Key Development Indicators *(2005)*	Mozambique	Sub-Saharan Africa	Low income
Population, mid-year (millions)	19.8	741	2,353
Surface area (thousand sq. km)	802	24,265	29,265
Population growth (%)	1.9	2.1	1.8
Urban population (% of total population)	35	35	30
GNI (Atlas method, US$ billions)	6.2	552	1,364
GNI per capita (Atlas method, US$)	310	745	580
GNI per capita (PPP, international $)	1,270	1,981	2,486
GDP growth (%)	7.7	5.3	7.5
GDP per capita growth (%)	5.7	3.1	5.6
(most recent estimate, 2000–2005)			
Poverty headcount ratio at $1 a day (PPP, %)	38 [a]	44	..
Poverty headcount ratio at $2 a day (PPP, %)	78 [a]	75	..
Life expectancy at birth (years)	42	46	59
Infant mortality (per 1,000 live births)	104	100	80
Child malnutrition (% of children under 5)	24	29	39
Adult literacy, male (% of ages 15 and older)	..	..	73
Adult literacy, female (% of ages 15 and older)	..	..	50
Gross primary enrollment, male (% of age group)	121 [b]	99	110
Gross primary enrollment, female (% of age group)	100 [b]	87	99
Access to an improved water source (% of population)	43	56	75
Access to improved sanitation facilities (% of population)	32	37	38





Net Aid Flows	**1980**	**1990**	**2000**	**2005** [c]
(US$ millions)				
Net ODA and official aid	169	1,003	877	1,228
Top 3 donors (in 2004):				
United States	9	62	116	110
Sweden	36	136	46	68
Denmark	11	24	47	67
Aid (% of GNI)	4.8	43.2	24.7	22.0
Aid per capita (US$)	14	75	49	63



Long-Term Economic Trends					**1980–90**	**1990–2000**	**2000–05**
					(average annual growth %)		
Consumer prices (annual % change)	..	47.0	12.7	6.4			
GDP implicit deflator (annual % change)	*4.1*	34.1	10.3	6.4			
Exchange rate (annual average, local per US$)	32.4	947.5	15,447.1	23,061.0			
Terms of trade index (2000 = 100)	86	111	100	113			
Population, mid-year (millions)	12.0	13.4	17.9	19.8	1.1	2.9	2.0
GDP (US$ millions)	3,526	2,463	3,778	6,636	-0.1	5.9	8.6
		(% of GDP)					
Agriculture	37.1	37.1	26.1	22.3	*6.6*	4.9	8.3
Industry	34.4	18.4	26.6	29.8	*-4.5*	12.8	10.3
Manufacturing	..	10.2	13.3	14.2	..	*10.2*	14.5
Services	28.5	44.5	47.3	47.9	*6.7*	3.6	7.8
Household final consumption expenditure	96.7	92.3	78.3	79.1	-1.7	3.7	6.6
General gov't final consumption expenditure	12.2	13.5	10.1	10.3	-1.1	3.1	8.5
Gross capital formation	7.6	22.1	33.5	20.4	4.1	11.4	5.1
Exports of goods and services	10.9	8.2	19.7	32.6	-6.8	11.0	20.0
Imports of goods and services	27.4	36.1	41.6	42.3	-3.8	6.3	10.1
Gross savings	-6.9	2.1	5.5	4.4	..	..	*15.9*

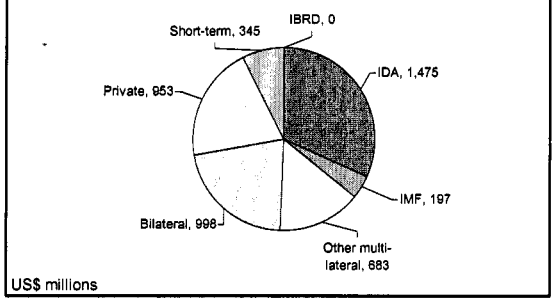
Note: Figures in italics are for years other than those specified. 2005 data are preliminary estimates. .. indicates data are not available.
a. Country poverty estimate is for 1997. b. data are from "Poverty and Social Impact Analysis: Primary School Enrollment and Retention-the Impact of School Fees" 2005, WB Report # 29423-MZ. c. Aid data are for 2004.

Balance of Payments and Trade	**2000**	**2005**
(US$ millions)		
Total merchandise exports (fob)	364	1,745
Total merchandise imports (cif)	1,163	2,467
Net trade in goods and services	-815	-642
Workers' remittances and compensation of employees (receipts)	37	*58*
Current account balance	-1,042	-1,058
as a % of GDP	-27.6	-15.9
Reserves, including gold	742	1,103

Central Government Finance [d]		
(% of GDP)		
Current Revenue	12.9	14.0
Tax revenue	11.8	12.1
Current Expenditure	13.1	13.8
Overall surplus/deficit	-5.8	-2.3
Highest marginal tax rate (%)		
Individual	20	*32*
Corporate	35	*32*

External Debt and Resource Flows		
(US$ millions)		
Total debt outstanding and disbursed	7,000	*4,651*
Total debt service	96	*83*
HIPC and MDRI debt relief (expected; flow)	4,300	..
Total debt (% of GDP)	185.3	*78.7*
Total debt service (% of exports)	12.5	*4.4*
Foreign direct investment (net inflows)	139	*245*
Portfolio equity (net inflows)	0	*0*

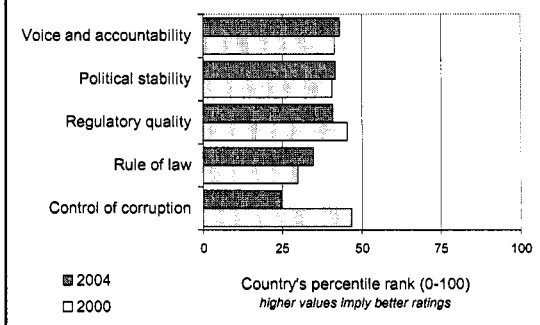
Composition of total external debt, 2004



US$ millions

Private Sector Development	**2000**	**2005**
Time required to start a business (days)	–	153
Cost to start a business (% of GNI per capita)	–	95.0
Time required to register property (days)	–	42
Ranked as a major constraint to business (% of managers surveyed who agreed)		
Cost of financing	..	83.8
Electricity	..	64.0
Stock market capitalization (% of GDP)	..	..
Bank branches (per 100,000 people)	..	..

Governance Indicators, 2000 and 2004



Source: Kaufmann-Kraay-Mastruzzi, World Bank

Technology and Infrastructure	**2000**	**2004**
Paved roads (% of total)	*18.7*	..
Fixed line and mobile phone subscribers (per 1,000 people)	8	*27*
High technology exports (% of manufactured exports)	9.2	*9.4*

Environment		
Agricultural land (% of land area)	61	*62*
Forest area (% of land area, 2000 and 2005)	24.9	24.6
Nationally protected areas (% of land area)	..	8.4
Freshwater resources per capita (cu. meters)	..	5,164
Freshwater withdrawal (% of internal resources)	..	*0.6*
CO2 emissions per capita (mt)	0.07	*0.08*
GDP per unit of energy use (2000 PPP $ per kg of oil equivalent)	2.2	*2.5*
Energy use per capita (kg of oil equivalent)	401	*430*

World Bank Group portfolio	**2000**	**2005**
(US$ millions)		
IBRD		
Total debt outstanding and disbursed	0	0
Disbursements	0	0
Principal repayments	0	0
Interest payments	0	1
IDA		
Total debt outstanding and disbursed	760	1,575
Disbursements	98	227
Total debt service	6	27
IFC *(fiscal year)*		
Total disbursed and outstanding portfolio	99	*116*
of which IFC own account	99	*116*
Disbursements for IFC own account	49	*0*
Portfolio sales, prepayments and repayments for IFC own account	3	*5*
MIGA		
Gross exposure	114	299
New guarantees	74	0

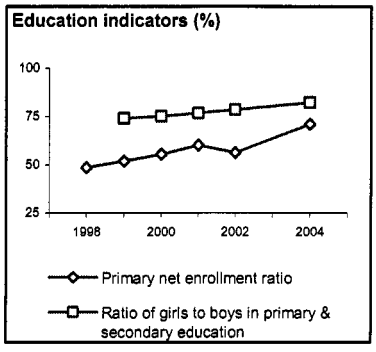
Note: Figures in italics are for years other than those specified. 2005 data are preliminary estimates. 8/12/06
.. indicates data are not available. – indicates observation is not applicable.
d. Revenues refer to current revenues excluding current grants; expenses refer to current expenditures; and, deficit refers to deficit after total grants.

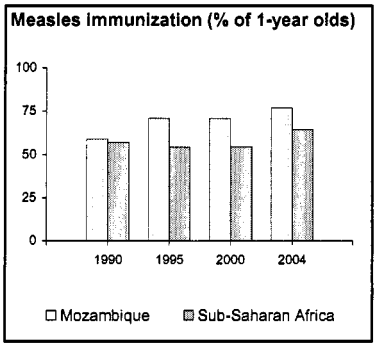
Millennium Development Goals

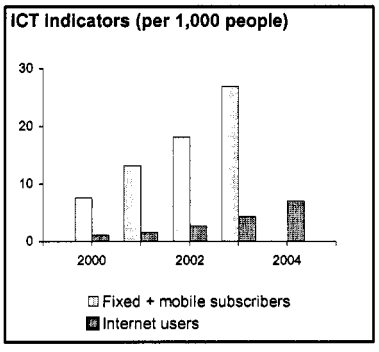
Mozambique

With selected targets to achieve between 1990 and 2015
(estimate closest to date shown, +/- 2 years)

	Mozambique			
Goal 1: halve the rates for $1 a day poverty and malnutrition	**1990**	**1995**	**2000**	**2004**
Poverty headcount ratio at $1 a day (PPP, % of population)	..	*37.8*	..	..
Poverty headcount ratio at national poverty line (% of population)	..	*69.4*	..	..
Share of income or consumption to the poorest quintile (%)	..	*6.5*	..	..
Prevalence of malnutrition (% of children under 5)	..	27	26	*24*
Goal 2: ensure that children are able to complete primary schooling				
Primary school enrollment (net, %)	*43*	..	56	71
Primary completion rate (% of relevant age group)	*27*	..	16	29
Secondary school enrollment (gross, %)	*7*	..	6	11
Youth literacy rate (% of people ages 15-24)	49	..	..	..
Goal 3: eliminate gender disparity in education and empower women				
Ratio of girls to boys in primary and secondary education (%)	*72*	..	75	82
Women employed in the nonagricultural sector (% of nonagricultural employment)	11	..	..	..
Proportion of seats held by women in national parliament (%)	16	*25*	*30*	*35*
Goal 4: reduce under-5 mortality by two-thirds				
Under-5 mortality rate (per 1,000)	235	212	178	152
Infant mortality rate (per 1,000 live births)	158	145	122	104
Measles immunization (proportion of one-year olds immunized, %)	59	71	71	77
Goal 5: reduce maternal mortality by three-fourths				
Maternal mortality ratio (modeled estimate, per 100,000 live births)	..	..	1,000	..
Births attended by skilled health staff (% of total)	..	*44*	..	*48*
Goal 6: halt and begin to reverse the spread of HIV/AIDS and other major diseases				
Prevalence of HIV (% of population ages 15-49)	..	..	..	*16.1*
Contraceptive prevalence (% of women ages 15-49)	..	*6*	..	*17*
Incidence of tuberculosis (per 100,000 people)	167	..	..	460
Tuberculosis cases detected under DOTS (%)	..	54	45	46
Goal 7: halve the proportion of people without sustainable access to basic needs				
Access to an improved water source (% of population)	36	..	..	43
Access to improved sanitation facilities (% of population)	20	..	..	32
Forest area (% of total land area)	25.5	..	24.9	*24.6*
Nationally protected areas (% of total land area)	..	..	..	8.4
CO2 emissions (metric tons per capita)	0.1	0.1	0.1	*0.1*
GDP per unit of energy use (constant 2000 PPP $ per kg of oil equivalent)	1.3	1.6	2.2	*2.5*
Goal 8: develop a global partnership for development				
Fixed line and mobile phone subscribers (per 1,000 people)	4	4	8	*27*
Internet users (per 1,000 people)	0	*0*	1	7
Personal computers (per 1,000 people)	..	*1*	3	6
Youth unemployment (% of total labor force ages 15-24)	..	..	..	..







Note: Figures in italics are for years other than those specified. .. indicates data are not available.

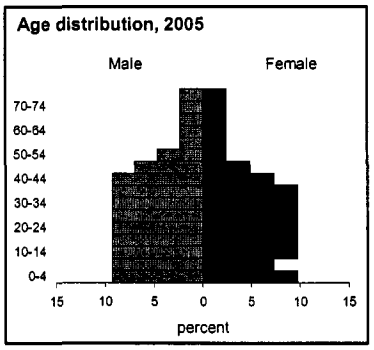
8/12/06

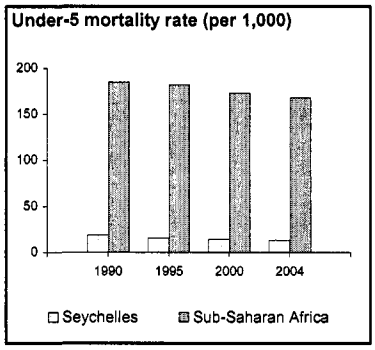
Development Economics, Development Data Group (DECDG).

Seychelles at a glance

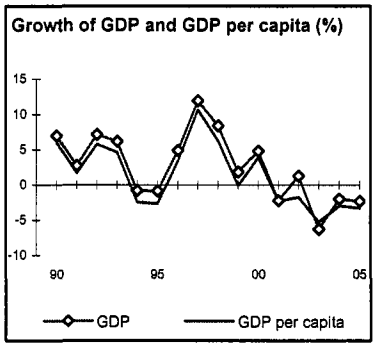
9/14/06

Key Development Indicators *(2005)*	Seychelles	Sub-Saharan Africa	Upper middle income
Population, mid-year (millions)	0.08	741	599
Surface area (thousand sq. km)	0.5	24,265	30,135
Population growth (%)	1.0	2.1	0.4
Urban population (% of total population)	53	35	72
GNI (Atlas method, US$ billions)	0.7	552	3,368
GNI per capita (Atlas method, US$)	8,290	745	5,625
GNI per capita (PPP, international $)	15,940	1,981	10,924
GDP growth (%)	-2.3	5.3	5.5
GDP per capita growth (%)	-3.3	3.1	5.0
(most recent estimate, 2000–2005)			
Poverty headcount ratio at $1 a day (PPP, %)	.. [a]	44	..
Poverty headcount ratio at $2 a day (PPP, %)	..	75	..
Life expectancy at birth (years)	73	46	69
Infant mortality (per 1,000 live births)	12	100	23
Child malnutrition (% of children under 5)	6 [b]	29	7
Adult literacy, male (% of ages 15 and older)	91	..	95
Adult literacy, female (% of ages 15 and older)	92	..	92
Gross primary enrollment, male (% of age group)	109	99	108
Gross primary enrollment, female (% of age group)	110	87	106
Access to an improved water source (% of population)	88	56	94
Access to improved sanitation facilities (% of population)	..	37	84





Net Aid Flows	1980	1990	2000	2005 [c]
(US$ millions)				
Net ODA and official aid	22	36	18	10
Top 3 donors (in 2004):				
France	6	13	2	5
Japan	*0*	1	1	1
Canada	0	0	0	0
Aid (% of GNI)	15.3	10.1	3.2	1.5
Aid per capita (US$)	337	513	225	124



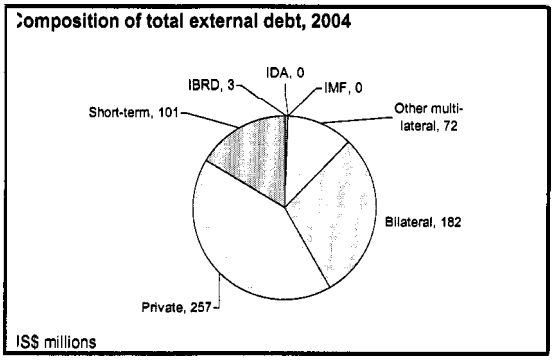
Long-Term Economic Trends					1980–90	1990–2000	2000–05
					(average annual growth %)		
Consumer prices (annual % change)	13.6	3.9	6.3	1.0 [d]			
GDP implicit deflator (annual % change)	22.0	5.6	0.7	1.0			
Exchange rate (annual average, local per US$)	6.4	5.3	5.7	5.5			
Terms of trade index (2000 = 100)	..	68	100	133			
Population, mid-year (millions)	0.1	0.1	0.1	0.1	0.8	1.5	0.8
GDP (US$ millions)	147	369	615	694	3.7	4.6	-2.5
		(% of GDP)					
Agriculture	6.8	4.8	2.8	2.7	-1.1	0.4	-2.9
Industry	15.6	16.3	29.0	28.0	4.3	11.6	-1.5
Manufacturing	7.4	10.1	19.2	16.7	6.1	8.3	-5.2
Services	77.5	78.9	68.2	69.4	3.9	2.7	-2.8
Household final consumption expenditure	44.2	52.0	53.5	73.6	*-0.5*	7.6	10.8
General gov't final consumption expenditure	28.7	27.7	24.2	25.2	*4.9*	1.4	-6.8
Gross capital formation	38.3	24.6	25.2	12.8	*10.3*	15.8	-22.5
Exports of goods and services	68.0	62.5	75.5	106.4	*19.3*	5.8	8.9
Imports of goods and services	79.1	66.7	78.4	118.0	*16.0*	10.5	6.7
Gross savings	..	21.7	15.7	-0.6	*1.1*	13.2	..

Note: Figures in italics are for years other than those specified. 2005 data are preliminary estimates. .. indicates data are not available.
a. According to the Household Income and Expenditure Survey carried out in 1999/00, Seychelles' poverty head count was 19.9 percent using the official poverty line of US$5 a day (1999/00 price). If however a poverty line of US$3 (PPP) a day is used instead the poverty headcount falls to a mere 2 percent. b. Data refers to 1988. c. Aid data are for 2004. d. Retail price index.

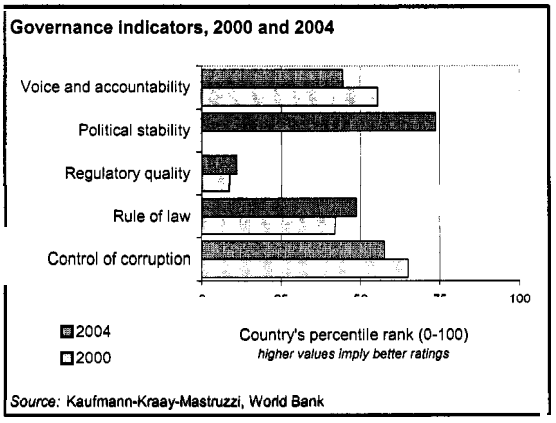
Balance of Payments and Trade	2000	2005
(US$ millions)		
Total merchandise exports (fob)	195	342
Total merchandise imports (cif)	341	587
Net trade in goods and services	-16	-72
Workers' remittances and compensation of employees (receipts)	2	*1*
Current account balance	-45	-109
as a % of GDP	-7.3	-15.7
Reserves, including gold	43	57

Central Government Finance		
(% of GDP)		
Revenue	40.1	50.7
Tax revenue	26.1	39.5
Current Expenditure	43.1	44.6
Overall surplus/deficit	-13.9	0.7
Highest marginal tax rate (%)		
Individual		
Corporate	..	

External Debt and Resource Flows		
(US$ millions)		
Total debt outstanding and disbursed	395	*615*
Total debt service	21	*52*
HIPC and MDRI debt relief (expected; flow)	–	–
Total debt (% of GDP)	64.3	*87.4*
Total debt service (% of exports)	4.4	*7.4*
Foreign direct investment (net inflows)	24	*37*
Portfolio equity (net inflows)	0	*0*



Private Sector Development	2000	2005
Time required to start a business (days)	–	..
Cost to start a business (% of GNI per capita)	–	..
Time required to register property (days)	–	..
Ranked as a major constraint to business (% of managers surveyed who agreed)		
n.a.	..	..
n.a.	..	..
Stock market capitalization (% of GDP)	..	..
Bank branches (per 100,000 people)	..	..



Technology and Infrastructure	2000	2004
Paved roads (% of total)	*84.5*	
Fixed line and mobile phone subscribers (per 1,000 people)	574	842
High technology exports (% of manufactured exports)	*5.2*	10.4

Environment		
Agricultural land (% of land area)	15	*15*
Forest area (% of land area, 2000 and 2005)	87.0	87.0
Nationally protected areas (% of land area)	..	..
Freshwater resources per capita (cu. meters)	..	..
Freshwater withdrawal (% of internal resources)	..	.
CO2 emissions per capita (mt)	7.2	*6.4*
GDP per unit of energy use (2000 PPP $ per kg of oil equivalent)		
Energy use per capita (kg of oil equivalent)		

World Bank Group portfolio	2000	2005
(US$ millions)		
IBRD		
Total debt outstanding and disbursed	3	2
Disbursements	0	0
Principal repayments	1	1
Interest payments	0	0
IDA		
Total debt outstanding and disbursed	0	0
Disbursements	0	0
Total debt service	0	0
IFC *(fiscal year)*		
Total disbursed and outstanding portfolio	12	2
of which IFC own account	12	2
Disbursements for IFC own account	7	*0*
Portfolio sales, prepayments and repayments for IFC own account	3	*3*
MIGA		
Gross exposure	–	–
New guarantees	–	–

Note: Figures in italics are for years other than those specified. 2005 data are preliminary estimates.
.. indicates data are not available. – indicates observation is not applicable.

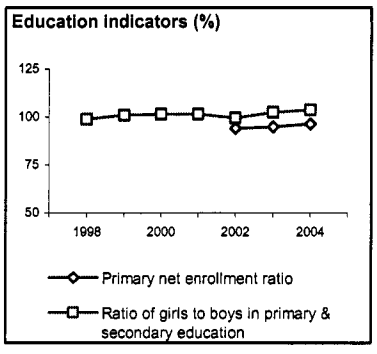
8/22/06

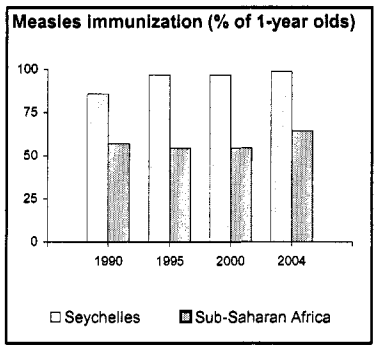
Millennium Development Goals

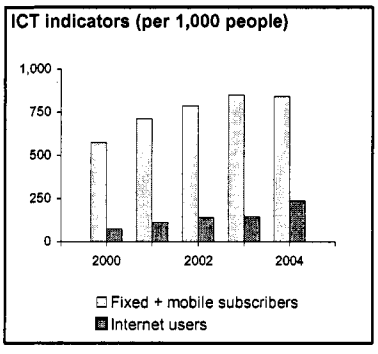
Seychelles

With selected targets to achieve between 1990 and 2015
(estimate closest to date shown, +/- 2 years)

	Seychelles			
Goal 1: halve the rates for $1 a day poverty and malnutrition	**1990**	**1995**	**2000**	**2004**
Poverty headcount ratio at $1 a day (PPP, % of population)	..	..	..	..
Poverty headcount ratio at national poverty line (% of population)	..	..	..	..
Share of income or consumption to the poorest quintile (%)	..	..	..	..
Prevalence of malnutrition (% of children under 5)	*6*	..	..	..
Goal 2: ensure that children are able to complete primary schooling				
Primary school enrollment (net, %)	..	..	..	96
Primary completion rate (% of relevant age group)	..	..	113	106
Secondary school enrollment (gross, %)	..	..	113	102
Youth literacy rate (% of people ages 15-24)	..	..	..	99
Goal 3: eliminate gender disparity in education and empower women				
Ratio of girls to boys in primary and secondary education (%)	..	..	101	104
Women employed in the nonagricultural sector (% of nonagricultural employment)	..	..	..	..
Proportion of seats held by women in national parliament (%)	16	*27*	24	*29*
Goal 4: reduce under-5 mortality by two-thirds				
Under-5 mortality rate (per 1,000)	19	16	15	14
Infant mortality rate (per 1,000 live births)	17	14	13	12
Measles immunization (proportion of one-year olds immunized, %)	86	97	97	99
Goal 5: reduce maternal mortality by three-fourths				
Maternal mortality ratio (modeled estimate, per 100,000 live births)	..	..	..	..
Births attended by skilled health staff (% of total)	..	..	..	..
Goal 6: halt and begin to reverse the spread of HIV/AIDS and other major diseases				
Prevalence of HIV (% of population ages 15-49)	..	..	..	..
Contraceptive prevalence (% of women ages 15-49)	..	..	..	..
Incidence of tuberculosis (per 100,000 people)	43	..	..	34
Tuberculosis cases detected under DOTS (%)	..	*83*	87	106
Goal 7: halve the proportion of people without sustainable access to basic needs				
Access to an improved water source (% of population)	88	..	..	88
Access to improved sanitation facilities (% of population)	..	..	..	..
Forest area (% of total land area)	87.0	..	87.0	*87.0*
Nationally protected areas (% of total land area)	..	..	..	..
CO2 emissions (metric tons per capita)	1.6	2.5	7.2	*6.4*
GDP per unit of energy use (constant 2000 PPP $ per kg of oil equivalent)	..	..	..	..
Goal 8: develop a global partnership for development				
Fixed line and mobile phone subscribers (per 1,000 people)	124	175	574	842
Internet users (per 1,000 people)	0	*7*	74	239
Personal computers (per 1,000 people)	..	..	136	179
Youth unemployment (% of total labor force ages 15-24)	..	..	..	..







Note: Figures in italics are for years other than those specified. .. indicates data are not available.

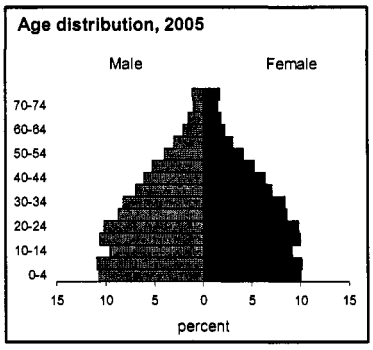
8/22/06

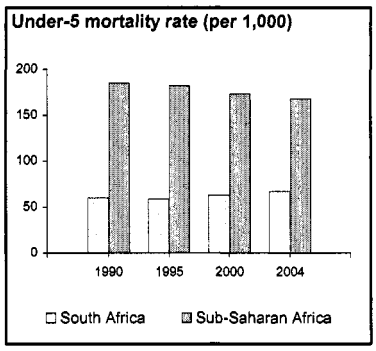
Development Economics, Development Data Group (DECDG).

South Africa at a glance

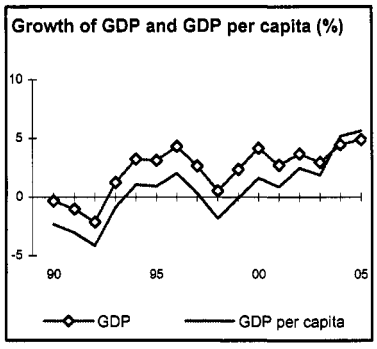
9/14/06

Key Development Indicators	South Africa	Sub-Saharan Africa	Upper middle income
(2005)			
Population, mid-year (millions)	45.2	741	599
Surface area (thousand sq. km)	1,219	24,265	30,135
Population growth (%)	-0.7	2.1	0.4
Urban population (% of total population)	59	35	72
GNI (Atlas method, US$ billions)	224	552	3,368
GNI per capita (Atlas method, US$)	4,960	745	5,625
GNI per capita (PPP, international $)	12,120	1,981	10,924
GDP growth (%)	4.9	5.3	5.5
GDP per capita growth (%)	5.6	3.1	5.0
(most recent estimate, 2000–2005)			
Poverty headcount ratio at $1 a day (PPP, %)	11	44	..
Poverty headcount ratio at $2 a day (PPP, %)	34	75	..
Life expectancy at birth (years)	45	46	69
Infant mortality (per 1,000 live births)	54	100	23
Child malnutrition (% of children under 5)	..	29	7
Adult literacy, male (% of ages 15 and older)	84	..	95
Adult literacy, female (% of ages 15 and older)	81	..	92
Gross primary enrollment, male (% of age group)	107	99	108
Gross primary enrollment, female (% of age group)	103	87	106
Access to an improved water source (% of population)	88	56	94
Access to improved sanitation facilities (% of population)	65	37	84





Net Aid Flows	**1980**	**1990**	**2000**	**2005** [a]
(US$ millions)				
Net ODA and official aid	..	*275*	488	617
Top 3 donors (in 2004):				
United States	..	*66*	106	95
United Kingdom	..	*19*	43	87
Germany	..	*8*	42	57
Aid (% of GNI)	..	*0.2*	0.4	0.3
Aid per capita (US$)	..	*7*	11	14



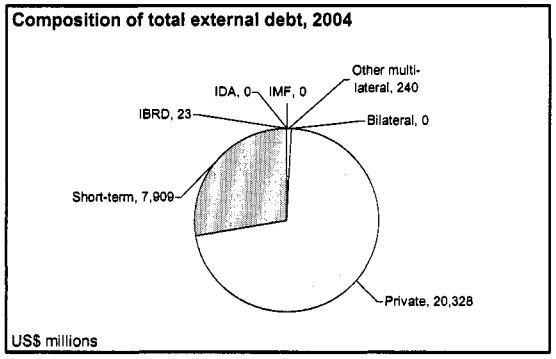
Long-Term Economic Trends					**1980–90**	**1990–2000**	**2000–05**
					(average annual growth %)		
Population, mid-year (millions)	27.6	35.2	44.0	45.2	2.4	2.2	0.5
GDP (US$ millions)	80,710	112,014	132,878	239,505	1.4	2.1	3.7
		(% of GDP)					
Agriculture	6.2	4.6	3.3	3.1	2.9	1.0	0.7
Industry	48.4	40.1	31.8	30.8	0.6	1.1	2.8
Manufacturing	21.6	23.6	19.0	19.1	1.1	1.6	2.5
Services	45.4	55.3	64.9	66.1	2.4	2.7	4.3
Household final consumption expenditure	47.8	57.1	63.0	58.9	1.3	2.2	4.6
General gov't final consumption expenditure	14.3	19.7	18.1	19.7	3.5	0.3	5.4
Gross capital formation	29.9	17.7	15.9	17.5	-4.7	5.0	6.5
Exports of goods and services	35.4	24.2	27.9	26.6	1.9	5.6	1.7
Imports of goods and services	27.3	18.8	24.9	22.4	-0.6	7.1	7.3
Gross savings	34.1	19.5	15.8	18.9	-0.5	3.7	*11.3*
Exchange rate (annual average, local per US$)	0.8	2.6	6.9	6.4			
Terms of trade index (2000 = 100)	..	104	100	100			
Consumer prices (annual % change)	13.7	14.3	5.3	3.4			
GDP implicit deflator (annual % change)	24.9	15.5	8.8	4.7			

Note: Figures in italics are for years other than those specified. 2005 data are preliminary estimates. .. indicates data are not available.
a. Aid data are for 2004.

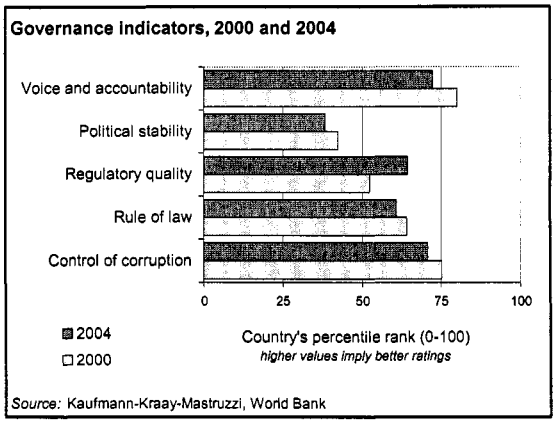
Balance of Payments and Trade	2000	2005
(US$ millions)		
Total merchandise exports (fob)	37,058	64,871
Total merchandise imports (cif)	29,757	62,200
Net trade in goods and services	3,930	-3,506
Workers' remittances and compensation of employees (receipts)	344	658
Current account balance	-172	-10,118
as a % of GDP	-0.1	-4.2
Reserves, including gold	7,533	20,630

Central Government Finance		
(% of GDP)		
Revenue	26.5	*27.8*
Tax revenue	24.0	*25.8*
Expense	27.9	*29.1*
Cash surplus/deficit	-2.0	*-1.9*
Highest marginal tax rate (%)		
Individual	45	*40*
Corporate	30	*30*

External Debt and Resource Flows		
(US$ millions)		
Total debt outstanding and disbursed	24,861	*28,500*
Total debt service	3,861	*3,825*
HIPC and MDRI debt relief (expected; flow)	–	–
Total debt (% of GDP)	18.7	*13.3*
Total debt service (% of exports)	9.8	*6.4*
Foreign direct investment (net inflows)	969	*585*
Portfolio equity (net inflows)	4,169	*6,661*



Private Sector Development	2000	2005
Time required to start a business (days)	–	38
Cost to start a business (% of GNI per capita)	–	8.6
Time required to register property (days)	–	23
Ranked as a major constraint to business (% of managers surveyed who agreed)		
Skills and education of available workers	..	*35.5*
Macroeconomic instability	..	*33.5*
Stock market capitalization (% of GDP)	154.2	235.4
Bank branches (per 100,000 people)	..	*6.0*



Technology and Infrastructure	2000	2004
Paved roads (% of total)	20.3	..
Fixed line and mobile phone subscribers (per 1,000 people)	302	*473*
High technology exports (% of manufactured exports)	7.0	5.7

Environment		
Agricultural land (% of land area)	82	*82*
Forest area (% of land area, 2000 and 2005)	7.6	7.6
Nationally protected areas (% of land area)	..	5.5
Freshwater resources per capita (cu. meters)	..	984
Freshwater withdrawal (% of internal resources)	..	*27.9*
CO2 emissions per capita (mt)	7.4	*7.6*
GDP per unit of energy use (2000 PPP $ per kg of oil equivalent)	3.8	*3.9*
Energy use per capita (kg of oil equivalent)	2,480	*2,587*

World Bank Group portfolio	2000	2005
(US$ millions)		
IBRD		
Total debt outstanding and disbursed	3	31
Disbursements	3	9
Principal repayments	0	1
Interest payments	0	1
IDA		
Total debt outstanding and disbursed	0	0
Disbursements	0	0
Total debt service	0	0
IFC *(fiscal year)*		
Total disbursed and outstanding portfolio	55	*192*
of which IFC own account	55	*192*
Disbursements for IFC own account	25	*52*
Portfolio sales, prepayments and repayments for IFC own account	3	*29*
MIGA		
Gross exposure	12	12
New guarantees	0	0

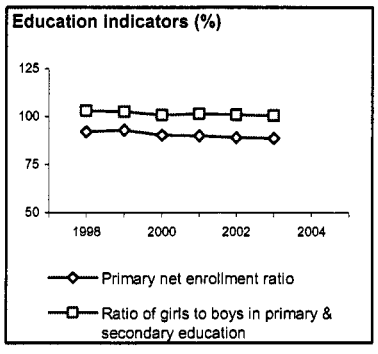
Note: Figures in italics are for years other than those specified. 2005 data are preliminary estimates. 8/13/06
.. indicates data are not available. – indicates observation is not applicable.

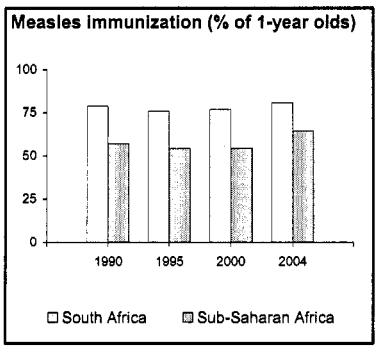
Millennium Development Goals

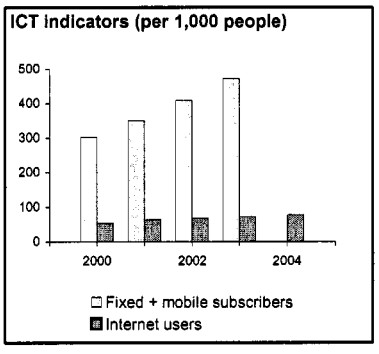
South Africa

With selected targets to achieve between 1990 and 2015
(estimate closest to date shown, +/- 2 years)

	South Africa			
Goal 1: halve the rates for $1 a day poverty and malnutrition	**1990**	**1995**	**2000**	**2004**
Poverty headcount ratio at $1 a day (PPP, % of population)	..	6.3	10.7	..
Poverty headcount ratio at national poverty line (% of population)	..	..	..	..
Share of income or consumption to the poorest quintile (%)	..	..	3.5	..
Prevalence of malnutrition (% of children under 5)	..	9	*12*	..
Goal 2: ensure that children are able to complete primary schooling				
Primary school enrollment (net, %)	*90*	..	90	*89*
Primary completion rate (% of relevant age group)	*75*	..	89	*96*
Secondary school enrollment (gross, %)	*69*	..	85	*90*
Youth literacy rate (% of people ages 15-24)	88	..	..	94
Goal 3: eliminate gender disparity in education and empower women				
Ratio of girls to boys in primary and secondary education (%)	*104*	..	101	*101*
Women employed in the nonagricultural sector (% of nonagricultural employment)	..	*40*	..	..
Proportion of seats held by women in national parliament (%)	3	*25*	30	*33*
Goal 4: reduce under-5 mortality by two-thirds				
Under-5 mortality rate (per 1,000)	60	59	63	67
Infant mortality rate (per 1,000 live births)	45	45	50	54
Measles immunization (proportion of one-year olds immunized, %)	79	76	77	81
Goal 5: reduce maternal mortality by three-fourths				
Maternal mortality ratio (modeled estimate, per 100,000 live births)	..	..	230	..
Births attended by skilled health staff (% of total)	..	82	*84*	..
Goal 6: halt and begin to reverse the spread of HIV/AIDS and other major diseases				
Prevalence of HIV (% of population ages 15-49)	..	..	..	*18.8*
Contraceptive prevalence (% of women ages 15-49)	57	..	*56*	..
Incidence of tuberculosis (per 100,000 people)	268	..	..	718
Tuberculosis cases detected under DOTS (%)	..	*6*	65	83
Goal 7: halve the proportion of people without sustainable access to basic needs				
Access to an improved water source (% of population)	83	..	..	88
Access to improved sanitation facilities (% of population)	69	..	..	65
Forest area (% of total land area)	7.6	..	7.6	*7.6*
Nationally protected areas (% of total land area)	..	..	..	5.5
CO2 emissions (metric tons per capita)	8.1	8.3	7.4	*7.6*
GDP per unit of energy use (constant 2000 PPP $ per kg of oil equivalent)	3.9	3.5	3.8	*3.9*
Goal 8: develop a global partnership for development				
Fixed line and mobile phone subscribers (per 1,000 people)	94	116	302	*473*
Internet users (per 1,000 people)	0	7	55	78
Personal computers (per 1,000 people)	7	28	66	82
Youth unemployment (% of total labor force ages 15-24)	..	..	44.2	*60.1*







Note: Figures in italics are for years other than those specified. .. indicates data are not available.

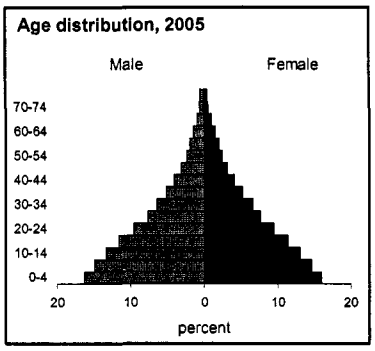
8/13/06

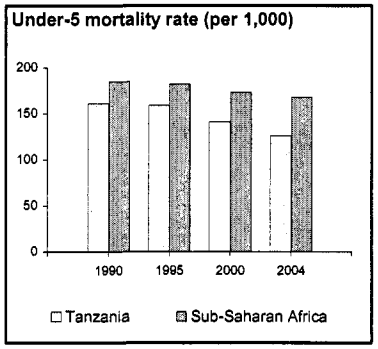
Development Economics, Development Data Group (DECDG).

Tanzania at a glance

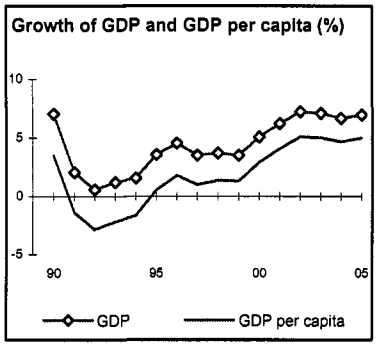
9/14/06

Key Development Indicators *(2005)*	Tanzania	Sub-Saharan Africa	Low income
Population, mid-year (millions)	38.3	741	2,353
Surface area (thousand sq. km)	945	24,265	29,265
Population growth (%)	1.8	2.1	1.8
Urban population (% of total population)	24	35	30
GNI (Atlas method, US$ billions)	12.7	552	1,364
GNI per capita (Atlas method, US$)	330	745	580
GNI per capita (PPP, international $)	730	1,981	2,486
GDP growth (%)	7.0	5.3	7.5
GDP per capita growth (%)	5.0	3.1	5.6
(most recent estimate, 2000–2005)			
Poverty headcount ratio at $1 a day (PPP, %)	58	44	..
Poverty headcount ratio at $2 a day (PPP, %)	90	75	..
Life expectancy at birth (years)	46	46	59
Infant mortality (per 1,000 live births)	78	100	80
Child malnutrition (% of children under 5)	..	29	39
Adult literacy, male (% of ages 15 and older)	78	..	73
Adult literacy, female (% of ages 15 and older)	62	..	50
Gross primary enrollment, male (% of age group)	108	99	110
Gross primary enrollment, female (% of age group)	104	87	99
Access to an improved water source (% of population)	62	56	75
Access to improved sanitation facilities (% of population)	47	37	38





Net Aid Flows	**1980**	**1990**	**2000**	**2005** [a]
(US$ millions)				
Net ODA and official aid	679	1,173	1,022	1,746
Top 3 donors (in 2004):				
United Kingdom	73	27	153	216
France	7	4	16	120
Netherlands	83	95	97	118
Aid (% of GNI)	..	28.8	11.4	15.5
Aid per capita (US$)	36	45	29	46



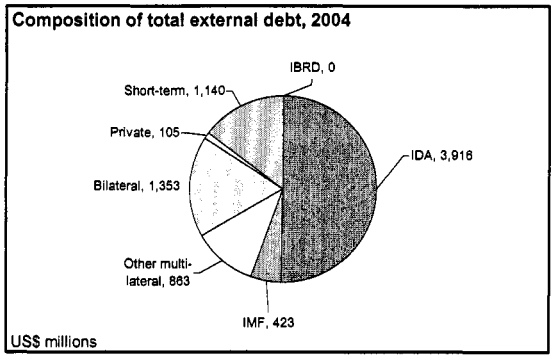
Long-Term Economic Trends					**1980–90**	**1990–2000**	**2000–05**
					(average annual growth %)		
Consumer prices (annual % change)	30.2	35.8	5.9	8.6			
GDP implicit deflator (annual % change)	..	22.4	7.5	3.7			
Exchange rate (annual average, local per US$)	8.2	195.1	800.4	1,128.9			
Terms of trade index (2000 = 100)	*83*	61	100	81			
Population, mid-year (millions)	18.9	26.2	34.8	38.3	3.3	2.8	2.0
GDP (US$ millions)	..	4,259	9,079	12,111	..	2.9	6.9
		(% of GDP)					
Agriculture	..	46.0	45.0	44.5	..	3.2	5.1
Industry	..	17.7	15.7	17.8	..	3.1	9.7
Manufacturing	..	9.3	7.5	7.5	..	2.7	8.0
Services	..	36.4	39.2	37.6	..	2.7	6.0
Household final consumption expenditure	..	80.9	82.2	76.8	..	2.2	1.7
General gov't final consumption expenditure	..	17.8	8.5	13.6	..	3.4	19.1
Gross capital formation	..	26.1	17.6	18.9	..	-1.6	9.4
Exports of goods and services	..	12.6	14.4	17.1	..	7.1	2.5
Imports of goods and services	..	37.5	22.7	26.3	..	0.3	5.2
Gross savings	..	7.7	7.5	9.3	..	..	*91.9*

Note: Figures in italics are for years other than those specified. 2005 data are preliminary estimates. .. indicates data are not available.
a. Aid data are for 2004.

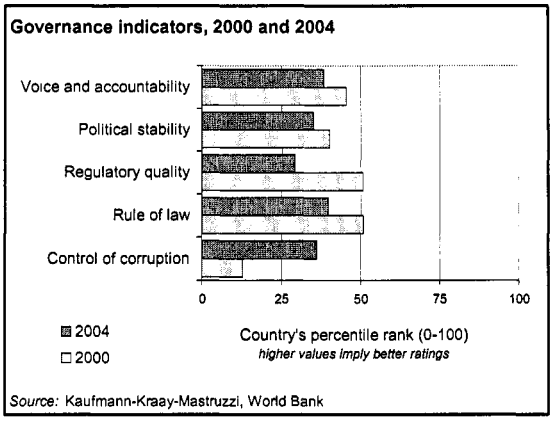
Balance of Payments and Trade	2000	2005
(US$ millions)		
Total merchandise exports (fob)	663	1,457
Total merchandise imports (cif)	1,534	2,826
Net trade in goods and services	-923	-1,507
Workers' remittances and compensation of employees (receipts)	8	*11*
Current account balance	-1,082	-1,551
as a % of GDP	-11.9	-12.8
Reserves, including gold	974	2,049

Central Government Finance		
(% of GDP)		
Revenue	..	..
Tax revenue	..	..
Expense	..	..
Cash surplus/deficit	..	..
Highest marginal tax rate (%)		
Individual	30	*30*
Corporate	30	*30*

External Debt and Resource Flows		
(US$ millions)		
Total debt outstanding and disbursed	6,931	*7,800*
Total debt service	171	*119*
HIPC and MDRI debt relief (expected; flow)	3,000	..
Total debt (% of GDP)	76.3	*69.0*
Total debt service (% of exports)	12.6	*5.9*
Foreign direct investment (net inflows)	463	*249*
Portfolio equity (net inflows)	0	*0*



Private Sector Development	2000	2005
Time required to start a business (days)	–	35
Cost to start a business (% of GNI per capita)	–	161.3
Time required to register property (days)	–	61
Ranked as a major constraint to business (% of managers surveyed who agreed)		
Tax rates	..	*73.4*
Electricity	..	*58.9*
Stock market capitalization (% of GDP)	2.6	*5.9*
Bank branches (per 100,000 people)	..	*0.6*



Technology and Infrastructure	2000	2004
Paved roads (% of total)	*4.2*	*8.6*
Fixed line and mobile phone subscribers (per 1,000 people)	10	*32*
High technology exports (% of manufactured exports)	1.2	1.7

Environment		
Agricultural land (% of land area)	54	*54*
Forest area (% of land area, 2000 and 2005)	42.2	39.9
Nationally protected areas (% of land area)	..	29.8
Freshwater resources per capita (cu. meters)	..	2,232
Freshwater withdrawal (% of internal resources)	..	*6.2*
CO2 emissions per capita (mt)	0.08	*0.10*
GDP per unit of energy use (2000 PPP $ per kg of oil equivalent)	1.3	*1.3*
Energy use per capita (kg of oil equivalent)	387	*465*

World Bank Group portfolio	2000	2005
(US$ millions)		
IBRD		
Total debt outstanding and disbursed	11	0
Disbursements	0	0
Principal repayments	4	0
Interest payments	1	0
IDA		
Total debt outstanding and disbursed	2,593	3,861
Disbursements	142	275
Total debt service	23	93
IFC *(fiscal year)*		
Total disbursed and outstanding portfolio	43	*32*
of which IFC own account	43	*32*
Disbursements for IFC own account	8	*3*
Portfolio sales, prepayments and repayments for IFC own account	4	*3*
MIGA		
Gross exposure	175	0
New guarantees	172	0

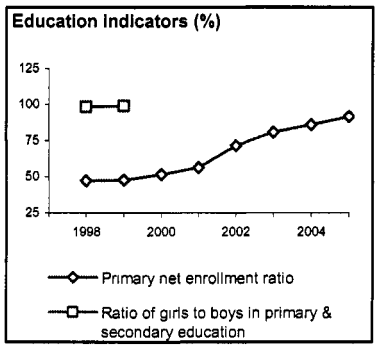
Note: Figures in italics are for years other than those specified. 2005 data are preliminary estimates. 8/13/06
.. indicates data are not available. – indicates observation is not applicable.

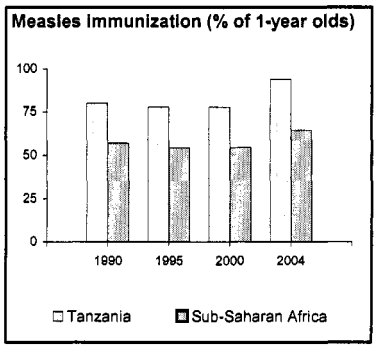
Millennium Development Goals

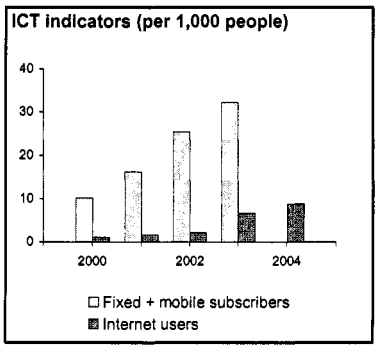
Tanzania

With selected targets to achieve between 1990 and 2015
(estimate closest to date shown, +/- 2 years)

	Tanzania			
Goal 1: halve the rates for $1 a day poverty and malnutrition	**1990**	**1995**	**2000**	**2004**
Poverty headcount ratio at $1 a day (PPP, % of population)	*48.5*	..	57.8	..
Poverty headcount ratio at national poverty line (% of population)	*38.6*	..	*35.7*	..
Share of income or consumption to the poorest quintile (%)	..	..	*7.3*	..
Prevalence of malnutrition (% of children under 5)	*29*	*31*	*29*	..
Goal 2: ensure that children are able to complete primary schooling				
Primary school enrollment (net, %)	*49*	..	51	*91*
Primary completion rate (% of relevant age group)	46	*57*	*53*	*54*
Secondary school enrollment (gross, %)	*5*	..	*6*	..
Youth literacy rate (% of people ages 15-24)	..	..	..	78
Goal 3: eliminate gender disparity in education and empower women				
Ratio of girls to boys in primary and secondary education (%)	*97*	..	*99*	..
Women employed in the nonagricultural sector (% of nonagricultural employment)	29	..	..	..
Proportion of seats held by women in national parliament (%)	..	*18*	16	*21*
Goal 4: reduce under-5 mortality by two-thirds				
Under-5 mortality rate (per 1,000)	161	159	141	126
Infant mortality rate (per 1,000 live births)	102	100	88	78
Measles immunization (proportion of one-year olds immunized, %)	80	78	78	94
Goal 5: reduce maternal mortality by three-fourths				
Maternal mortality ratio (modeled estimate, per 100,000 live births)	..	..	1,500	..
Births attended by skilled health staff (% of total)	*44*	*38*	*36*	46
Goal 6: halt and begin to reverse the spread of HIV/AIDS and other major diseases				
Prevalence of HIV (% of population ages 15-49)	..	..	..	*6.5*
Contraceptive prevalence (% of women ages 15-49)	*10*	*18*	*25*	*26*
Incidence of tuberculosis (per 100,000 people)	179	..	..	347
Tuberculosis cases detected under DOTS (%)	..	56	48	47
Goal 7: halve the proportion of people without sustainable access to basic needs				
Access to an improved water source (% of population)	46	..	..	62
Access to improved sanitation facilities (% of population)	47	..	..	47
Forest area (% of total land area)	46.9	..	42.2	*39.9*
Nationally protected areas (% of total land area)	..	..	..	29.8
CO2 emissions (metric tons per capita)	0.1	0.1	0.1	*0.1*
GDP per unit of energy use (constant 2000 PPP $ per kg of oil equivalent)	1.4	1.4	1.3	*1.3*
Goal 8: develop a global partnership for development				
Fixed line and mobile phone subscribers (per 1,000 people)	3	3	10	32
Internet users (per 1,000 people)	0	*0*	1	9
Personal computers (per 1,000 people)	..	*2*	3	7
Youth unemployment (% of total labor force ages 15-24)	..	..	..	..







Note: Figures in italics are for years other than those specified. .. indicates data are not available.

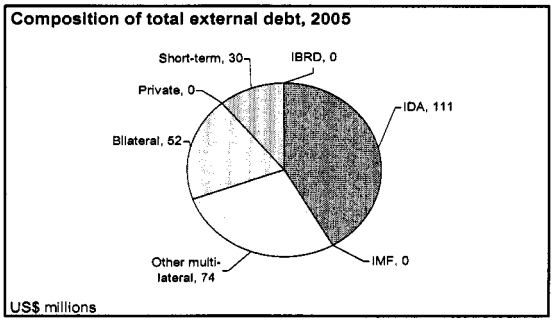
8/13/06

Development Economics, Development Data Group (DECDG).

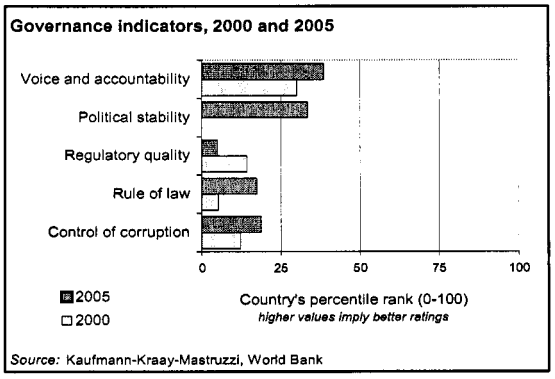
Balance of Payments and Trade	2000	2005
(US$ millions)		
Total merchandise exports (fob)	14	14
Total merchandise imports (cif)	56	118
Net trade in goods and services	-32	-82
Workers' remittances and compensation of employees (receipts)	25.6	65.0
Current account balance	-4	-12
as a % of GDP	-2.0	-3.2
Reserves, including gold	42.5	87.1

Central Government Finance		
(% of GDP)		
Revenue	10.2	15.7
Tax revenue	..	..
Expense	16.3	19.9
Cash surplus/deficit	..	..
Highest marginal tax rate (%)		
Individual	..	..
Corporate	..	..

External Debt and Resource Flows		
(US$ millions)		
Total debt outstanding and disbursed	...	266.0
Total debt service	...	7.5
HIPC and MDRI debt relief (expected; flow)	...	–
Total debt (% of GDP)	...	71.5
Total debt service (% of exports)	...	16.8
Foreign direct investment (net inflows)	...	-0.5
Portfolio equity (net inflows)	...	0



Private Sector Development	2000	2006
Time required to start a business (days)	–	23
Cost to start a business (% of GNI per capita)	–	192.3
Time required to register property (days)	–	24
Ranked as a major constraint to business (% of managers surveyed who agreed)		
n.a.	..	..
n.a.	..	..
Stock market capitalization (% of GDP)	..	..
Bank branches (per 100,000 people)	..	..



Technology and Infrastructure	2000	2004
Paved roads (% of total)	*76.5*	..
Fixed line and mobile phone subscribers (per 1,000 people)	13	*26*
High technology exports (% of manufactured exports)	0.5	..

Environment		
Agricultural land (% of land area)	65	*66*
Forest area (% of land area, 2000 and 2005)	3.6	2.2
Nationally protected areas (% of land area)	..	..
Freshwater resources per capita (cu. meters)	..	2,041
Freshwater withdrawal (% of internal resources)	..	*0.8*
CO2 emissions per capita (mt)	0.16	*0.15*
GDP per unit of energy use (2000 PPP $ per kg of oil equivalent)	..	..
Energy use per capita (kg of oil equivalent)	..	..

World Bank Group portfolio	2000	2005
(US$ millions)		
IBRD		
Total debt outstanding and disbursed	0	0
Disbursements	0	0
Principal repayments	0	0
Interest payments	0	0
IDA		
Total debt outstanding and disbursed	71	111
Disbursements	2	3
Total debt service	2	3
IFC *(fiscal year)*		
Total disbursed and outstanding portfolio	–	–
of which IFC own account	–	–
Disbursements for IFC own account	–	–
Portfolio sales, prepayments and repayments for IFC own account	–	–
MIGA		
Gross exposure	–	–
New guarantees	–	–

Note: Figures in italics are for years other than those specified. 2005 data are preliminary estimates. 11/6/06
.. indicates data are not available. – indicates observation is not applicable.

Development Economics, Development Data Group (DECDG).

Annex 15: Incremental Cost Analysis

Western Indian Ocean
GEF-Marine Highway and Coastal Contamination Prevention Project

1. Development goals

The project's development objective is to increase the safety and efficiency of navigation. This will be achieved by establishing a demonstration marine highway to guide ships through selected busy sea lanes and by strengthening capacity for port state control.

2. Baseline

Marine highway development. All the countries in the region maintain some navigational charts. However, underground seismic activity is common in the area, and charts are not updated frequently enough to show the changes. Many have been created and are being updated using technology that is now obsolete in richer parts of the world. Similarly, all countries maintain some aids to navigation. These, too, are based on outmoded technology. As a result, ships take significant precautions to avoid colliding with one another or grounding on shoals whose locations are uncertain. Countries would like to upgrade to more reliable and modern aids to navigation systems in cooperation with the shipping industry, but will not likely be able to forge a regional agreement that would ensure all countries followed the same approach (which would lower costs to ships of installing equipment), or to be able to install a demonstration project to test its feasibility in the region. Moreover, large fishing vessels often operate in the region without obtaining the necessary licenses, fail to report or misreport their catch, or use prohibited techniques. All countries of the region are now exploring ways to enforce their fishing regulations, such as through the use of satellite-linked vessel monitoring systems. With very different capacities, all are moving at different speeds.

Oil and chemical spill contingency planning. The island countries of the western Indian Ocean region are taking action to protect their marine and coastal ecosystems. Comoros, Madagascar, Mauritius, and Seychelles—with support of the GEF-financed Western Indian Ocean Oil Spill Contingency Planning Project—have prepared and tested national oil spill contingency plans and have established capacity within their ministries of environment robust capacity to respond to oil and chemical spill emergencies. They have also ratified key IMO conventions and translated their provisions into national legislation. They have also entered into a regional oil spill contingency plan and established a subregional oil spill coordination center in Madagascar that is responsible for coordinating periodic updating of the plan, regional exercises, and response to an actual emergency.

The coastal countries of southeastern Africa are also acting to safeguard their marine and coastal environments, although at different paces. Kenya has ratified the OPRC90. It prepared in July 2001 a national oil spill response contingency plan, and has capacity to address Tier 1 and Tier 2 oil spills. To coordinate response to oil spills, it has established the national oil spill response committee with representatives of the Kenya Ports Authority, the oil industry, the shipping

industry, and bunkering services. The Kenya Ports Authority owns key oil spill response equipment, including a tug equipped with spraying equipment and a catamaran equipped with boom, spray arms, and several skimmers. Additional equipment is planned to be secured near future, with support of the local oil companies and the national authorities.

South Africa is yet to ratify OPRC 90, but has committed to doing so. Comoros, Madagascar, Mauritius, Mozambique, and Tanzania have yet to ratify the London Convention 72. All countries involved in the project who have not already done so are committed to ratifying Intervention 69. Moreover, the countries that were not part of the West Indian Ocean Oil Spill Contingency Planning Project will need to translate the provisions of conventions that they ratify into local laws and regulations. Tanzania with support of the IMO prepared in 2003 a national oil spill response contingency plan. The Tanzania Harbors Authority, which has jurisdiction over the major ports of the country, including Dar-Es-Salaam, Mtwara and Tanga is responsible for coordinating oil spill response, in conjunction with the National Environment Management Council. Mozambique has prepared a draft national oil spill response contingency plan and has established a working group, including relevant public institutions, NGOs, and the oil industry. Neither Mozambique nor Tanzania currently have specialized equipment with which to address even minor spills. Neither Kenya, Mozambique, nor Tanzania are party to a regional agreement that would allow them to pool resources to address Tier 3 oil spills. None of the three countries have produced sensitivity maps that would provide them with information for planning land use and controlling movement of ships through environmentally sensitive areas. Currently, regional oil spill response capacity resides only in South Africa and its Regional Response Center.

Port state control. Kenya, Mauritius, South Africa, Mozambique, Seychelles, and Tanzania are parties to the Indian Ocean Memorandum of Understanding for Port State Control. Only South Africa, however, has implemented a port state control system, which aims to verify whether foreign flag vessels calling at a port of state comply with applicable international conventions and with national laws. The other countries have yet to implement an inspection regime. Nearly all 265 inspections carried out in 2003 were carried out by SAMSA. Mauritius carried out one inspection and the other countries carried out none. Comoros, and Madagascar are not currently parties to the memorandum of understanding.

Global environmental objective

The project's medium to long-term global environmental goal is to reduce the risk of ship-based environmental contamination (such as oil spills from groundings and illegal discharges of ballast and bilge waters) and to strengthen the capacity of countries to respond to oil or chemical spill emergencies in the region.

The project has three specific global environmental objectives. The first is to ascertain the economic, technical, and institutional feasibility of introducing modern aids to navigation systems in the region, such as an electronically supported marine highway, to guide ships through sensitive areas and to monitor the movements and activities of fishing and other vessels operating within countries' territorial waters. The second objective is to support widening the existing regional agreement (June 5, 1998) on port state control and implementation of its provisions. The third objective, focusing on Kenya, Mozambique, South Africa, and Tanzania,

is to reduce risks of environmental damage to beaches, fishing grounds, and other domestic resources from spills of oil and chemicals. This will be achieved by supporting efforts of Kenya, Mozambique, South Africa, and Tanzania, and to become part of a regional oil spill response plan, by completing the identification and mapping of environmentally sensitive areas along coasts and sea lanes, and by widening the regional collaboration that has been built under the GEF-supported West Indian Ocean Islands Oil Spill Contingency Planning Project.

GEF Alternative

Marine highway development. The GEF alternative will provide the catalyst to install a demonstration precision marine navigation system based on common technological standards, test the feasibility of the approach, and assess the potential benefits of scaling up. Should the concept prove feasible and the benefits to countries and to ships clear, it is expected that a barrier to a safer and more efficient navigation system will have been overcome, and that precision navigation aids will be installed on all the busy routes in the region and be used by all ships above a certain size. The technology of the marine highway may also provide benefits for the management of fisheries and other marine living resources in several ways. The electronic nautical charts incorporating information on environmental resources (where possible) will enable oil and chemical tankers to avoid environmentally-sensitive areas. They will also help fisheries managers to target their monitoring and control efforts. The technology of the marine highway may also be useful to authorities for monitoring, control, and surveillance of fishing vessels by demonstrating the value of satellite-linked systems for these purposes. The benefits for fisheries management are thus likely to significantly exceed the value of the expenditures on activities directly related to fisheries.

Oil and chemical spill contingency planning. The GEF alternative will enable Kenya, Mozambique, South Africa, and Tanzania to contribute to and benefit from the regional oil spill contingency plan and the regional oil spill coordination center. This will make it possible to respond to accidents rapidly wherever they occurred in the region. Rapid response is critical to minimize damage from oil and chemical spills. Widening regional capacity will also create a framework for the cooperation among the countries in other areas of shared concern, such as sustainable fisheries management. The GEF alternative will also provide the catalyst to bring the governments of Kenya, Mozambique, and Tanzania and the local and international oil shipping industries together in a cooperative partnership that will be sustained once the countries join the regional plan and enter into agreements for sustainable financing. Further, oil companies have pledged to provide technologies and expertise to address oil spill emergencies.

Port state control. The GEF alternative will facilitate the widening the regional memorandum of understanding on port state control (June 5, 1998) to include Comoros and Madagascar. It will also support its implementation. Having such capacity will enable the countries to inspect ships entering their ports to ensure that they comply with international conventions and national laws governing safety and environmental practices and living and working conditions. Having such capacity will also enable the authorities to control the under-reporting or misreporting of fish catches and penalize offenders.

Scope of the analysis

The activities related to the development of the marine highway, widening the regional agreement on port state control and strengthening capacity to implement it, and widening the regional contingency plan will not take place without the GEF alternative. The oil spill contingency planning activities are largely baseline activities and the GEF will allocate limited funding for these, focusing on the activities designed to create the regional plan and strengthen regional collaboration.

Domestic benefits in addition to those in the baseline include reductions in risks of damage to marine and coastal resources that provide employment, foreign exchange, and food for country nationals, such as tourism and fishing. Additional domestic benefits will also arise from the increased safety and efficiency of navigation faced by national flag ships transiting through the region. Countries will also benefit from the reduced pollution (such as gasoline discharges) and noise of foreign flag carriers that are able to pass through the region more rapidly.

Table A: Project Cost (US$)

Component	Baseline Cost	GEF Incremental				Total GEF Alternative (Baseline + Incremental)
		GEF Financing	Gov. Cont.	Other Co-Financing	Total GEF Increment	
A: Development of a regional marine highway and institutions	0	6.0	0.4	6.3	12.6	12.6
B: Capacity building for prevention of coastal and marine contamination	0	1.1	0	3.2	4.3	4.3
C: Building capacity for regional oil spill response	1.6	0.7	0.9	2.8	2.8	4.4
D: Port state control, fisheries monitoring, and project coordination and management	0	3.3	0.6	0.8	4.7	4.7
Total	**1.6**	**11.0**	**1.8**	**13.1**	**24.4**	**26.0**

Notes: Figures may not add up due to rounding.

The costs of baseline activities are estimated to total US$1.6 million. These costs are for activities related to building the regional plan, to increase capacity in Mozambique, South Africa, Tanzania, and Kenya, and for port state control in South Africa. The incremental cost of the project, totaling US$24.4 million, will enable the project to achieve its global environmental objectives. Of this, less than 45 percent is requested from the GEF. The remaining support will come from bilateral donors primarily in the form of grants and from the international and local shipping industry and nongovernmental organizations representing the oil and shipping industries and navigation services in the form of in-kind contributions.

Table B: Breakdown of Component A—Development of a regional marine highway and institutions (in US$ millions)

Component	Baseline Cost	GEF Incremental				Total GEF Alternative (Baseline + Incremental)
		GEF Financing	Gov. Cont.	Other Co-Financing	Total GEF Increment	
1. Nautical and publications	0	2.4	0.3	1.6	4.3	4.3
2. Maintenance of charts and publications	0	0.9	0	0.4	1.2	1.2
3. Aids to navigation	0	0.5	0	0.1	0.5	0.5
4. Automatic information service	0	1.7	0	4.2	5.9	5.9
5. Support to search and rescue	0	0.1	0	0	0.1	0.1
6. Evaluation of the demonstration phase and preparation of phase 2	0	0.4	0	0.1	0.5	0.5
Total	**0**	**6.0**	**0.4**	**6.3**	**12.6**	**12.6**

Notes: Figures may not add up to total due to rounding, the total GEF amount is US$11.0 million

Table C: Breakdown of Component B—Coastal and marine contamination prevention capacity building (in US$ millions)

Subcomponent	Baseline Cost	GEF Incremental				Total GEF Alternative (Baseline + Incremental)
		GEF Financing	Gov. Cont.	Other Co-Financing	Total GEF Increment	
1. Sensitization of coastal and marine protection	0	0.5	0	0.8	1.3	1.3
2. Pollution prevention and contingency management plans	0	0.3	0	1.6	1.9	1.9
3. Methodology for valuing ecosystem benefits	0	0.2	0	0.4	0.6	0.6
4. Preparation of regional database on marine and coastal resources	0	0.2	0	0.4	0.6	0.6
Total	**0**	**1.1**	**0.4**	**3.2**	**4.3**	**4.3**

Notes: Figures may not add up to total due to rounding, the total GEF amount is US$11.0 million

Table D: Breakdown of Component C—Building a regional oil spill response capacity (in US$ millions)

Subcomponent	Baseline Cost	GEF Incremental				Total GEF Alternative (Baseline + Incremental)
		GEF Financing	Gov. Cont.	Other Co-Financing	Total GEF Increment	
1. Ratification of conventions	0.6	0.3	0	0.4	0.7	1.3
2. Development of national oil spill contingency plans	0.5	0.2	0	0.6	0.8	1.3
3. Oil spill response equipment	0.5	0	0.9	1.8	2.7	3.2
4. Regional agreement and regional contingency plan	0	0.1	0	0.1	0.2	0.2
Total	**1.6**	**0.7**	**0.9**	**2.8**	**4.4**	**6.0**

Notes: Figures may not add up to total due to rounding, the total GEF amount is US$11.0 million

Table E: Breakdown of Component D—Port state control, fisheries monitoring, project coordination and management (in US$ millions)

Subcomponent	Baseline Cost	GEF Incremental				Total GEF Alternative (Baseline + Incremental)
		GEF Financing	Gov. Cont.	Other Co-Financing	Total GEF Increment	
1. Promotion of port state control	0	0.4	0	0.6	1.1	1.1
2. Support for monitoring of fishing activities	0	0.5	0	0.1	0.5	0.5
3. Coordination with other related GEF-supported projects	0	0.1	0	0.1	0.1	0.1
4. a. Project Management	0	1.1	0.6	0	2.9	2.9
4. b. Other Technical Assistance, monitoring and auditing	0	1.2	0	0	0	0
Total	**0**	**3.3**	**0.6**	**0.8**	**4.6**	**4.6**

Notes: Figures may not add up to total due to rounding, the total GEF amount is US$11.0 million.

Table F: Summary of co-financing of the GEF Alternative

Financing		Amount (US$ millions)
Co-Financing	European Commission	3.0
	France (Reunion)	0.9
	IMO	0.2
	International industry	0.3
	Local industry	2.1
	Hydrographic Organization UK and Service Hydrographique et Océanographique de la Marine	1.5
	International Hydrographic Organization	0.5
	INTERTANKO members	3.6
	IALA	0.3
	IOC	0.2
	SAMSA	0.5
	Subtotal	*13.1*
Government Contributions		1.9
	Co-Financing Sub-total	*15.0*
GEF Financing		11.0
	Total with Incremental Cost	**26.0**

Note: Figures may not add up to total due to rounding, the total GEF amount is US$11.0 million

Annex 16: STAP Roster Review

Western Indian Ocean
GEF-Marine Highway and Coastal Contamination Prevention Project

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March 2005

Basis for the proposal

The Western Indian Ocean region is an area of high marine biodiversity significance, rich in marine fauna and flora and extremely sensitive coastal and marine environments. The growing population and expanding urbanization and economic activity in the coastal zones coupled with virtually nonexistent management are increasingly placing marine and coastal resources under threat. The increasing volume of maritime traffic and port development in the region, as well as the increasing mix of other uses are seriously taxing the capacity of the region to handle such growth and diverse uses safely and efficiently. The environmental consequences of the aforementioned situations are increased risk in the number and magnitude of oil spills, discharges of bilge waters and chemical spills from ships. These facts have motivated the countries bordering the Western Indian Ocean to adopt an innovative and more effective approach to improving the management of maritime traffic and marine environment protection in the region.

Goals and expected outcomes

The ultimate goal of this initiative is the use of a modern aid to navigation systems, such as a marine highway, to guide ships through sensitive areas and to monitor the movements and activities of fishing and other vessels within countries' territorial waters. The project is planned to be implemented in phases. The first phase will consist of a demonstration project, which if successful, will lead to the implementation of a full-scale project that will cover the whole of the Western Indian Ocean region. A key outcome of the demonstration phase will be the commitment of the beneficiary countries and the other partners to roll out a full marine highway covering all major shipping routes of the Western Indian Ocean region. Other outcomes include reduction in the number of accidents, accidental spills, and illegal discharges per ship operating in the region. Potential beneficiaries of the marine highway system apart from the countries bordering the Western Indian Ocean and the shipping sector are those engaged in marine environment protection. The PDF will help finance the feasibility study and the institutional and financial sustainability study.

Comments

The proposed project fits well within the overall strategic thrust of the GEF-funded International Water activities. It will help overcome the barriers to the adoption of best-practice technology in marine navigation and pollution control, and thereby reduce the contamination of the international waters, which is one of the major objectives of the GEF's Operational Program 10 – the International Waters Contaminant-Based Operational Program. It also satisfies the criteria for the international waters operational strategy by assisting countries to better understand the

environmental concerns of their international waters and to work collaboratively to address them by building capacity of a regional institution and by helping countries to implement the international conventions and agreements to which they are party.

This project is foreseen as being useful in building institutional capacity in reducing transboundary pollution and increasing the safety of navigation in the Western Indian Ocean region. The enthusiasm and strong support of the various stakeholders, especially of the Governments themselves, are very much needed in order to foster a regional approach to finding solutions to their common problems. Cooperation among international organizations is foreseen as necessary for the development and co-ordination of the project. Hence, a consortium of entities, both inter- and non-governmental, will be involved in its execution and thus ensuring quality outputs. In addition, the collaborative actions initiated by this proposal should be able to be sustained once the stakeholders realize the significant benefit from such incremental actions. The outstanding accomplishments of the GEF-supported Western Indian Ocean Islands Oil Spill Contingency Planning Project indicate the existence of important national and regional initiatives and collaboration. Finally, the SAP and the Project Logical Framework to be elaborated in this proposal is certainly quite comprehensive, effective and appears to be achievable within the period of project implementation. Overall, my review concludes that the immediate objectives and the outputs and activities of the project can be successfully achieved with co-operation among all stakeholders involved.

Annex 17: Summary of Risk Assessment

Western Indian Ocean
GEF-Marine Highway and Coastal Contamination Prevention Project

There are two aspects to the risk assessment, namely the areas most prone to oil spill and their environmental sensitivity. This section provides details on the methodology applied to rank the area in terms of risk and thereafter presents the results of the work.

Risk is the product of frequency and consequence. On this basis the results from the oil spill drift analysis were combined with the results of a coastal environmental sensitivity study to determine the areas at greatest risk.

ENVIRONMENTAL SITUATION IN THE REGION

General

The coastal and marine environment of the Western Indian Ocean is important on a global scale. It contains two of the world's 64 major large marine ecosystems in the Agulhas current and the Somali current, which extend from South Africa to Somalia and include the islands of Madagascar, Mauritius, Comoros and Seychelles.

The Western Indian Ocean is a distinct biogeographical province of the Indo-West Pacific and exhibits with high levels of regional endemism. Local and national endemism are generally low, except around some of the islands, notably Mauritius and Reunion, and in southern Mozambique. The region has a high marine biodiversity, particularly for corals reef fish and large marine species including cetaceans and marine turtles.

The marine and coastal environments of the Western Indian Ocean are adversely affected by various human pressures including over-exploitation of living marine food resources, pollution, introduction of alien species, and habitat destruction and degradation. Natural pressures also affect the region including the coral bleaching that occurred during 1998/99 and left many reefs severely damaged.

Marine and coastal habitats

Mangroves and coral reefs are likely to be the sensitive habitats requiring consideration within the context of the proposed project. They are the dominant coastal and near-shore marine habitats of the western Indian Ocean and important to the stability of marine ecosystems, particularly fisheries, because they are nursery areas for many species.

Both mangroves and corals are sensitive to the impacts of oil spill. The severity of oil-related impacts depends on the amount and type of oil spilled the weathering of oil prior to habitat exposure and the physical characteristics of the impacted area.

Mangroves
Mangroves can be considered marine tidal forests. They are most luxuriant around the mouths of large rivers and sheltered bays and are found mainly in the tropics where annual rainfall is fairly high. The plants are usually adapted to anaerobic conditions of both salt and fresh water environments and have adapted to muddy, shifting, saline conditions. They have stilt roots that project above the mud and water in order to absorb oxygen. The complex mangrove ecosystem includes associated bodies of water and soils as well as a variety of plants, animals and micro-organisms and as such they constitute important areas for commercial fisheries.

Mangrove ecosystems play an important role in coastal protection, stabilising shorelines and decreasing erosion, in fisheries production and provide local populations with a wide range of products including food and wood for building and fuel. It is estimated that a total of 654 species of algae, molluscs, crustaceans, echinoderms and fish of economic importance are associated with the mangroves of the Western Indian Ocean.

Corals Reefs
Coral reefs are made of many animals and plants as well as corals. The growth forms of coral vary enormously and this results in irregular reef structures. Corals occur along shallow, tropical coastlines where the marine waters are clean, clear and warm. The growth of corals is controlled primarily by the availability of light, sediment load and wave action. The complex topography and the high retention of nutrients by corals make coral reefs one of the most productive ecosystems in the world.

Marine and coastal fauna
Oil pollution may affect marine organisms through a variety of means with the vulnerability of the organism dependant upon a number of factors. These include; direct ingestion of oil, loss of prey or primary food source, loss of supporting habitats and the extent of pre-existing habitats and natural population levels.

Marine turtles and marine mammals of the region are particularly vulnerable mainly as a result of their dependency upon the habitats of the region (for example, seagrasses for dugong and suitable nesting beaches for turtles) and their current low populations.

Seabirds
The Western Indian Ocean hosts a number of pelagic feeding seabirds, which are widespread, but concentrations in any one specific area are low. However, waders and wildfowl can congregate in large numbers on the sea or shorelines to breed, feed or moult are particularly vulnerable to oil pollution. Ramsar sites are a good indication of these areas where bird densities are high but important seabird breeding sites also exist at nationally designated Marine Protected Areas such as those of Ile Ronde and Ile aux Serpents in Mauritius. Few species are globally threatened (that is on the International Union for the Conservation of Nature Red List) because most seabirds and waders have very wide distributions.

Marine Turtles
Five of the seven species of marine turtle found in the world occur in the Western Indian Ocean. All are on the International Union for the Conservation of Nature Red List: the hawksbill

(*Eretmochelys imbricata*) and the leatherback (*Dermochelys coriacea*) are both categorised as critically endangered; the green (*Chelonia mydas*), olive Ridley (*Lepidochelys olivacea*), and loggerhead (*Caretta*) are listed as endangered.

The life cycle of marine turtles involves a variety of habitats. Eggs are laid and incubate in sandy beaches. The hatchlings and young juveniles are pelagic and inhabit the surface waters of convergence zones and major gyre systems throughout tropical and temperate oceans. The feeding grounds of most adults include sea grass beds, coral reefs, sand and mud flats, and mangrove ecosystems, although the pelagic leatherback feeds in deep waters.

Marine Mammals

Over 27 species of Marine mammal have been recorded in the Western Indian Ocean. However, very few of these frequent inshore waters and are much more heavily dependent upon resources of the open ocean for survival.

Within the study area, the only cetacean (whales, dolphins and porpoises) that regularly resides in the inshore waters of the beneficiary countries is the Indo-Pacific hump-backed dolphin (*Sousa chinensis*). This dolphin is present in the coastal waters of all the beneficiary countries on mainland Africa and Madagascar, but not the smaller islands of Comoros, Mauritius, Reunion and Seychelles. The rare dugong (*D. dugon*) is the only other marine mammal regularly recorded in the western Indian Ocean and is resident in the coastal waters of all beneficiary countries except Reunion and Seychelles. Its distribution coincides with low energy inshore coastal waters that support sea grass beds, its primary food source.

Marine protected areas

Marine protected areas aim at retaining significant coastal and marine resources and environment in their natural state, thus protecting habitat for the productivity of ecosystems and endangered species. The term "marine protected areas" is interpreted in many different ways throughout the world. The International Union for the Conservation of Nature defines a marine protected areas as:

"Any area of intertidal or sub-tidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment."

Marine protected areas can be designated by the nation state indicating degree of importance on a regional scale or they can be designated under international guidelines for their importance on an international scale.

World Heritage Sites

The Convention concerning the Protection of the World Cultural and Natural Heritage adopted by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1972 developed from the merging of two separate movements: the first focusing on dangers to cultural properties, and the other dealing with conservation of nature. World Heritage Sites are designated according to their cultural and natural attributes, which make them outstanding value to humanity

Three natural heritage sites set in marine environments exist within project region of the Western Indian Ocean. These may exemplify major stages of the earth's history; represent ongoing ecological and biological processes; contain the most important natural habitats for conservation of globally significant biodiversity; or it may be a setting of exceptional beauty.

Ramsar sites.
The Convention on Wetlands of International Importance especially as waterfowl habitat (Ramsar, Iran 1971) is an intergovernmental treaty, which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. Ramsar sites were originally sites designated under the convention for the conservation of wetlands primarily to provide habitat for water birds but has, over the years, broadened its scope to cover all aspects of wetland conservation. The emphasis has changed to recognize wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well being of human communities.

UNESCO Man and Biosphere Sites
The UNESCO Man and the Biosphere develops the basis, within the natural and the social sciences, for the sustainable use and conservation of biological diversity, and for the improvement of the relationship between people and their environment globally. In particular, the Man and the Biosphere Programme is designed to encourage interdisciplinary research, demonstration and training in natural resource management and further the involvement of science and scientists in policy development concerning the wise use of biological diversity.

National Designations
National designations for marine protected areas vary in name greatly between beneficiary countries and are often referred to as marine parks, national parks, nature reserves, fishing reserves, special nature reserves and wildlife utilization areas. For consistency marine protected areas are classified in accordance with International Union for the Conservation's protected area management categories.

Fisheries and aquaculture
The coastal fishery yield along the entire western boundary of the Indian Ocean, including the various island states of the western half of that ocean, represents less than one percent of the global landings. In spite of this, most of the coastal fish stocks of the region are considered to be fully exploited or even overexploited.

The artisanal fisheries (subsistence fisheries) support over 70,000 fishers in the region. These skilled but not industrialised operators use the traditional fishing methods and gears such as beach seines, traps, fishing lures and cast nets and work in the reefs, lagoons, estuaries and near-shore waters. This type of fishing accounts for more than 80 percent of the total marine fish catch in Comoros and Madagascar.

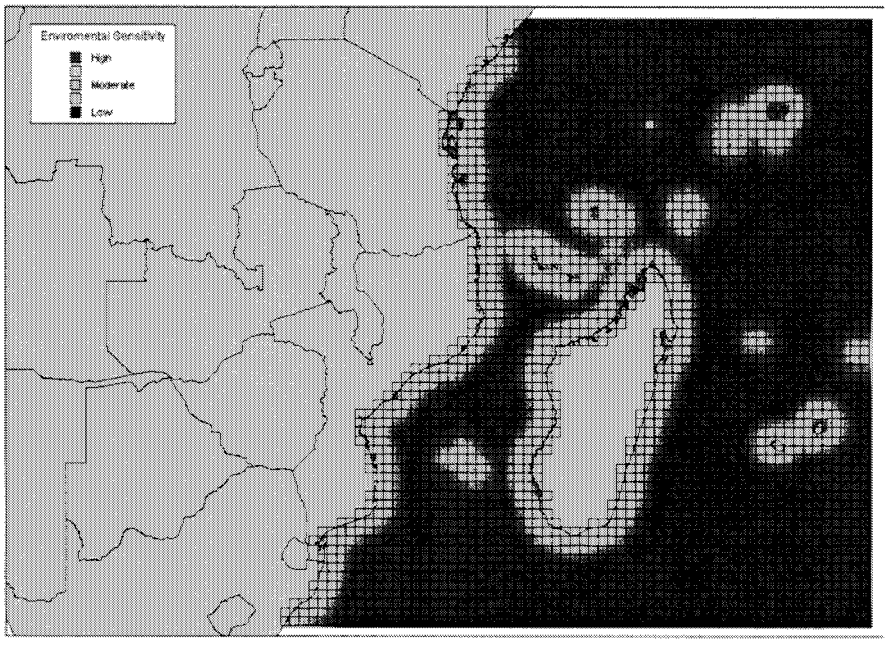
Coastal fisheries production usually far outweighs production from oceanic species such as tunas and generally constitutes around 90–95 percent of total landings, but in the southwestern Indian Ocean the contributions of coastal and oceanic fisheries are approximately equal. While the coastal fisheries are harvested mostly by coastal states, mostly distant-water fishing fleets from Europe and eastern Asia harvest the more lucrative oceanic fisheries. Even so, and despite the

low coastal landings, fishing and its associated economic activities are often extremely important to local economies. In some of the southwestern Indian Ocean countries, fish are nearly the sole source of animal protein available to the local populations. Moreover, in a region faced with chronic scarcities of foreign exchange, exports of fishery products represent vital sources of exchangeable earnings.

Mariculture and aquaculture are developing in the region and demonstrate high potential as indicated by the recent success of farming of seaweed in Tanzania, tiger prawns in Seychelles and oysters in Kenya. Seaweed farming and related activities in Zanzibar employ over 10,000 local community members and earn the country over US$10 million foreign exchange.

Environmental Sensitivity

The environmental sensitivity study was conducted in parallel to the analysis reporting within this report. A systematic scoring and ranking method for each square in a grid-based map covering the western Indian Ocean region determined the total sensitivity. The following figures present a plot of the overall scores for environmental sensitivity.



Annex 17 Figure 1: Environmental Sensitivity

Areas Exposed to Pollution from Shipping

The areas exposed to pollution were assessed based on the shipping database, frequency models and consequence assessment.

Figure3.25: **Oil Flows and Major Chokepoints, 2003**

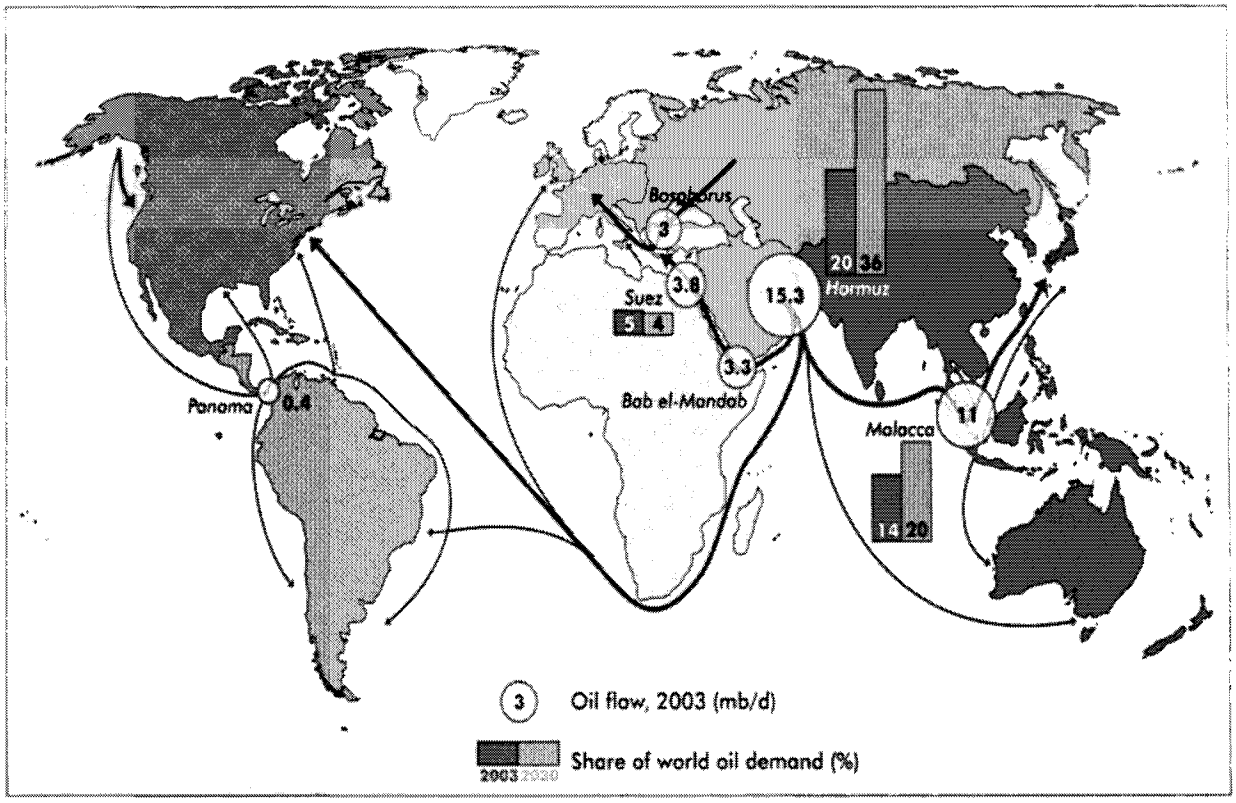


Figure 2 Oil Flows
A detailed analysis of shipping traffic in the area was carried out. This was based on port log data for worldwide ports for all shipping >150 GT. In addition to this localised satellite tracking data and route planning information was incorporated to ensure that the resulting representation of shipping patterns was reliable. The database included information on tankers, cargo vessels and ferries.

Following from this collision risk modelling was conducted using UK models for the following scenario's:

Ship collision
Grounding (drifting and powered)
Fire and explosion
Foundering or structural failure
Grounding

The models were not calibrated for the area and United Kingdom calibration was applied. The following factors were given consideration:

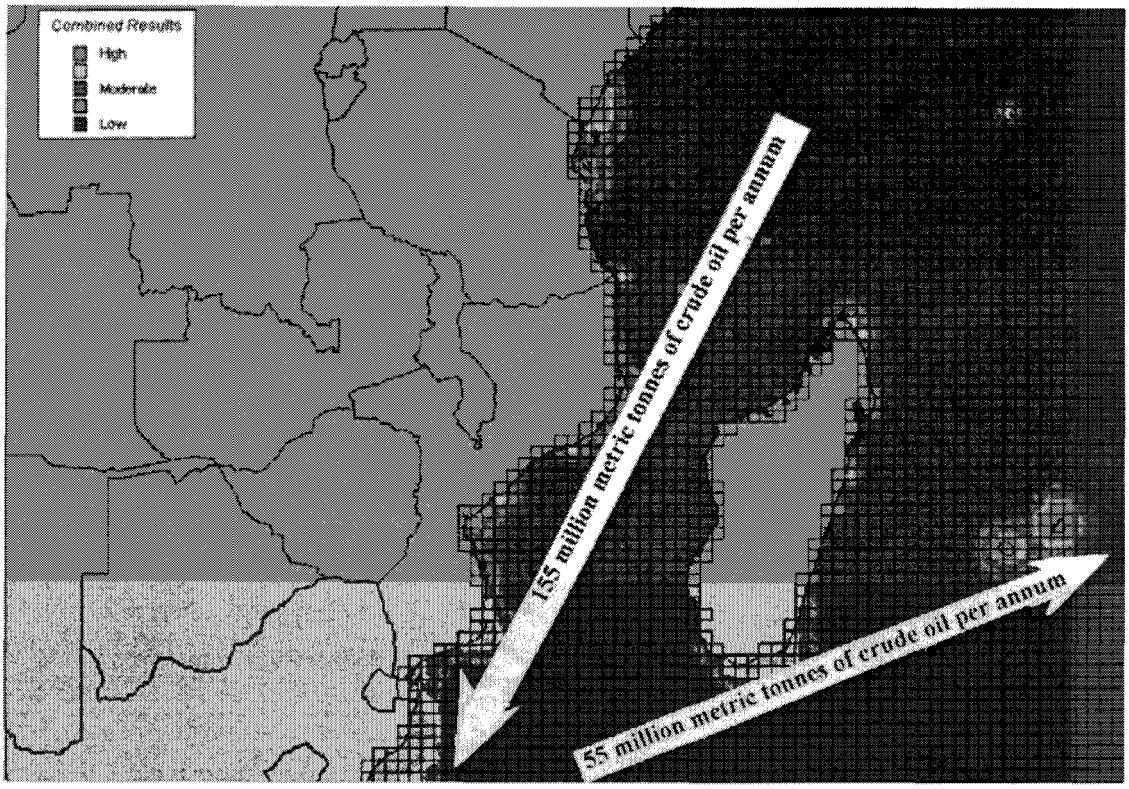
Annex 17 Table 1: Factors Considered within Accident Models

Models	Parameters used within Models
Ship collision	Route positions, number of vessels on route, vessel type, size and speed distributions, visibility, encounter angle, vessel traffic services areas.
Powered grounding	Number of vessels on route, vessel type and size distributions, proximity of route to coastline, coastal rockiness, vessel traffic services areas, sea state, geometrical probabilities, navigational error probabilities.
Drifting grounding	Route positions, number of vessels on route, vessel type and size distributions, wind strength and direction, sea conditions, self-repair probabilities, mechanical failure probabilities, drift speeds.
Fire and explosion	Number of vessels on route, vessel type and size distributions.
Foundering and structural failure	Number of vessels on route, vessel type, size and age distributions, traffic densities and probability of severe weather in different geographical locations.

Following assessment of the accident frequencies, an assessment of the likely level of hydrocarbon release was estimated by assessing the volume of cargo held by passing tankers and the bunkers on board all vessels. This was first considered as a quantity of hydrocarbon released at the location of the incident and thereafter the area likely to be affected by the release giving account to the drift characteristics.

Within the drifting model for the hydrocarbon release localised wind data was applied from admiralty charts covering the area.
Areas exposed to pollution from shipping
The areas exposed to pollution were assessed based on the shipping database, frequency models and consequence assessment.

Risk Analysis
Following determination of the oil presence risk and environmental sensitivity these were combined to produce the over risk results. The following figure provides an overview of the results to give a visual interpretation of the area most at threat from oil spill from shipping.



Annex 17 Figure 3: Final Results

The oil spill results were then overlaid on the environmental sensitivity charts and combined to produce the finalised risk results for this study. This identified the following areas as the most sensitive to hydrocarbon pollution from shipping:

Mainland Africa:

Mombasa, Kenya
Pemba island
Dar es Salaam and Zanzibar Channel
Ponta Sancul to Ponta Namalungo
Banco de Sofala
Ponta da Barra
Baia de Maputo
Northeast South Africa

Island areas:

Southern Madagascar (including Banc De L'Etoile)
Réunion island
Mauritius

Annex 18: Options for the Route of the Marine Highway in the Western Indian Ocean Region

Western Indian Ocean
GEF-Marine Highway and Coastal Contamination Prevention Project

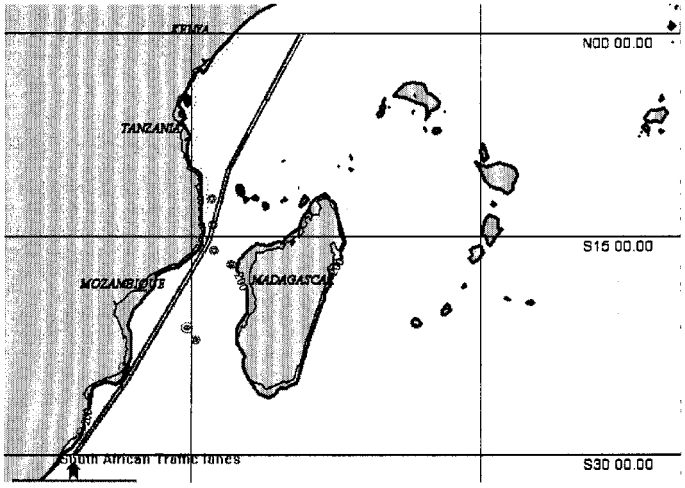
1. A large percentage of the world's oil supply is following the route between the African East Coast and the Islands of Madagascar, Comoros, Seychelles, Mauritius and the Island territories of France in the SW Indian ocean, and
2. This maritime traffic flow will follow the most economical routes based on geographical distances, currents and the like, and
3. The route will, now and in the future, flow into the existing main traffic route, as made compulsory by the Republic of South Africa, and
4. The route will go through areas with a high ecological impact ratio, and
5. Future Marpol, Aton, search and rescue and safety and security -action programs will have to be based on reliable basic hydrographic, environmental and meteorological data.

It is established that a reliable and up-to-data hydrographic chart of the entire route and approached to ports and harbors is to be made available for the future execution of the project. A preliminary evaluation of the existing data has been carried out in the form of a desk study, with existing hydrographic electronic navigation charts and other data as basis for this study. The route, as presently taken by mainly all tanker traffic, is the basis for the proposed route, as described further on. Other routes, such as the one going south of Madagascar and the one going through the Comoros, is not generally used by tanker trade and is therefore considered to be Priority 2, to be dealt with in a later stage.

The general lay-out of the route, as provisionally determined, was based on the following:

1. Selection of the shortest possible route between the Cape and the Middle East
2. Minimum distance of 20 nautical miles from shore
3. Traffic lanes of 5 miles width, one direction only
4. Separation zone of 10 nautical miles, this is based on estimated average navigational errors/accuracy/datum shifts by merchant navy users of the system.
5. 20 nautical miles distance from islands, island groups, shoals and obstructions.

Route No. 1:

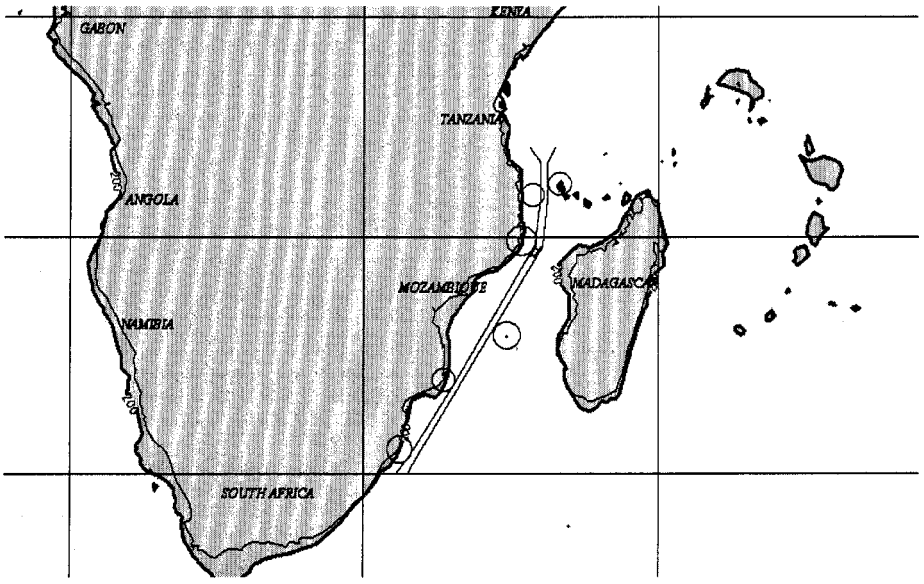


The described route has been based on the assumption that a minimum of 20 nautical miles is to be kept from the shorelines and obstructions at all times. Henceforth, this route is an extension of the South African vessel traffic services route, which stops at the latitude of Durban port.

However, due to the possible present lack of support in the fields of maritime pollution, safety and security, it has been argued to change this minimum distance to 50 nautical miles, that is 12 hours drifting towards the coast, assuming a drift rate of four knots.

An alternative route has provisionally been designed and it appears that this route just fits in the area. Several critical areas will have to be surveyed in detail but in general, the route has a minimum depth of at least 1000 meters.

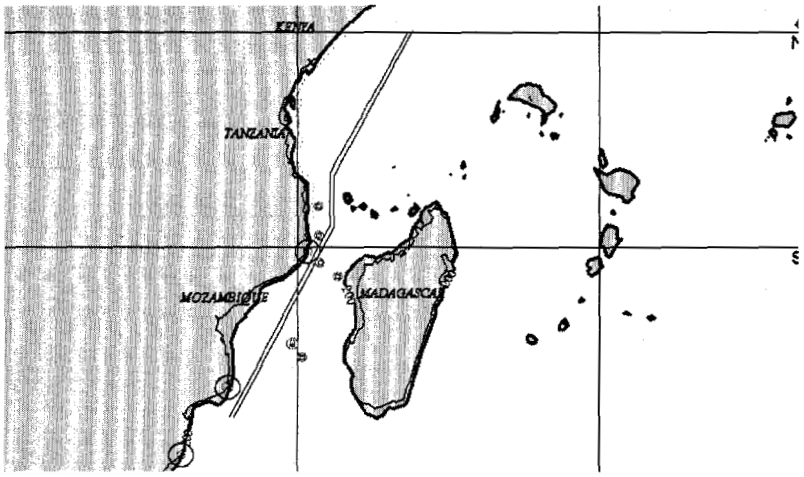
Route No. 2:



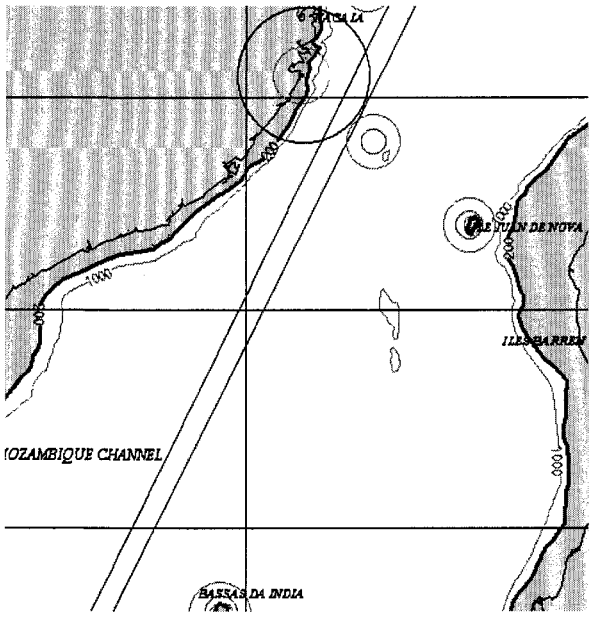
Route No. 3

The original Route 1, is based on the assumption that a minimum of 20 nautical miles is to be kept from the shorelines and obstructions at all times. Alternative route 2 is based on a minimal distance of 50 nautical miles to the shore and obstructions. Alternative route 3 is a combination of routes 1 and 2. The advantage of this route is a more smoother transition in certain parts. One disadvantage is that it passes the coast at one point at less than 50 nautical miles (35 nautical miles).

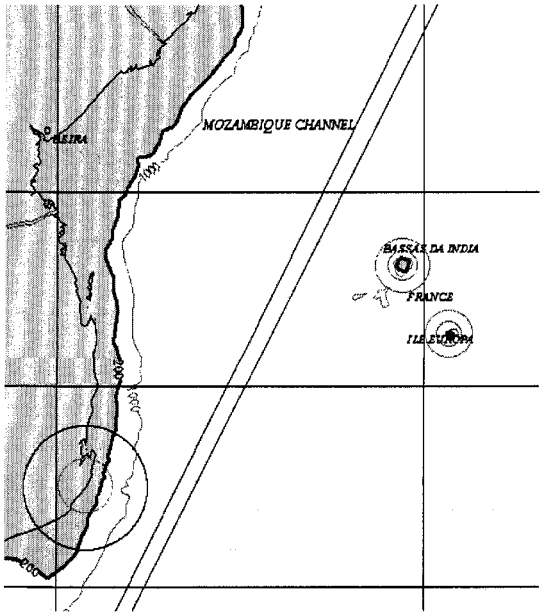
Route No. 3:



At 16° South, the route Passes the mainland at 35NM.



At 25° South, the distance to the coast is more than 50NM.



These two locations are seen in the risk analysis as red hotspots. It is assumed that these two locations, or nearby ports, can be allocated as future Marpol bases. Route 3 is the recommended route, however, detailed design and smoothing of bends is still to be completed. Suggestions and recommendations from the appropriate authorities can be incorporated in this stage.

Hydrographic Surveys

The available maps and charts indicate that in a large part of the intended route, surveys are quite outdated. Except for the southern part, where the South African authorities have mapped the area thoroughly, some areas near the French islands and approach routes to Mozambique, most of the data is rather unreliable. A general survey, covering the entire route completely will form the basis of a safe and secure passage route; detailed surveys of shoals and obstructions will give more insight into the general build-up of the area. It can be seen from the charts that the area is of volcanic nature and shoals may appear very abruptly. Also, changes may occur due to this phenomenon. This means that, although an initial large-scale survey is required on a short term basis, regular surveys will be needed to keep the navigation information up to date and reliable. It is recommended to survey the route with a Multi Beam Echo Sounder, in order to cover the entire area with no risk of missing pinnacles, wrecks, and the like. In the modern survey world, various companies possess extensive capabilities with hull-mounted multibeam systems. The map data will clearly show, apart from the general required bathymetric information, a wide range of active geologic processes, from mass wasting and furrows, to faults and seafloor seepage, in unprecedented detail.

It is recommended to survey the entire route, including a stretch of a width of 10 nautical miles on both sides of the route. Special attention is to be given to shoals, banks and seamounts, as appear in the charts, often with question marks. The approach channels from the routes to the various ports are to be surveyed using the same methodology, while the ports and harbours with their surrounding waters can be surveyed with Lidar based techniques from a small aircraft. This way the entire area can be covered in relatively short time at minimal costs. All data will be submitted in digital form to the appropriate authority for the production of charts and electronic navigation charts. Proper, up to date, reliable navigational charts and electronic navigation charts will encourage the seafarer to follow this route, especially when the route is not (yet) a mandatory one.

Annex 19: Partners' Contributions

Western Indian Ocean
GEF-Marine Highway and Coastal Contamination Prevention Project

A large number of partners will provide support for implementation of various activities. This annex provides information on the nature and amount of their support (figures may not add to total due to rounding).

Indian Ocean Commission ($0.2 million in kind and $4.7 million under EU financing for components B and C)

The IOC will serve as the subregional project management unit responsible for implementing components B and C (under GEF and EU financing) and aspects of component D. It will provide in-kind support of office space and office operational costs, secretarial services, and financial management and accounting services required to maintain the project accounts according to Bank guidelines and procedures.

South African Maritime Safety Authority ($0.4 million)

SAMSA will serve as the regional project management unit, responsible for overall project coordination and for implementing component A and aspects of component D. SAMSA will provide in-kind support of office space and office operational costs, secretarial services, and financial management services and accounting services required to maintain the project accounts according to Bank guidelines and procedures.

International Association of Marine Aids to Navigation and Lighthouse Authorities ($0.1 million)

The mandate of IALA is to ensure that seafarers are provided with effective and harmonized marine aids to navigation services worldwide to assist in safe navigation of shipping and protection of the environment. IALA will support the project by providing in-kind support to analyze navigational risks, to assess the existing system of aids to navigation, and to recommend the most cost-effective measures to improve the safety off navigation in the region. IALA will also organize workshops, seminars, and training in areas of its expertise.

International Hydrographic Organization ($0.4 million)

The mandate of the IHO is to ensure that adequate and timely hydrographic information for worldwide marine navigation and other purposes are provided through national hydrographic offices. The Capacity Building Committee of the IHO will assist in developing hydrographic services in the project countries.

United Kingdom Hydrographic Office (UKHO) and Service Hydrographique et Océanographique de la Marine (SHOM-France) ($1.5 million)

The UKHO, part of the UK Ministry of Defense, is responsible for providing navigational products and services to mariners in compliance with SOLAS regulations. The UKHO produces standard navigational charts and navigational publications and is a key entity in electronic charting developments. SHOM, part of the French Ministry of Defense, like its UK counterpart, provides navigational information and produces navigational charts and navigational publications.

The two organizations working together will produce charts and nautical publications of the project-supported marine highway and of select port and port approaches, assist with the training of operators and administrators of the various systems that the project puts in place, and through their involvement in IHO's Capacity Building Committee encourage other states to assist with the overall development and capacity building of surveying, charting, provision of maritime safety information and other related services in the region.

International Maritime Organization ($0.1 million)

The mandate of the IMO is to encourage and facilitate the adoption and implementation of the highest practical standards in matters concerning maritime safety, security, efficiency of navigation, and the prevention and control of marine pollution from ships. The IMO will contribute to the project by providing in-kind support and advice through participation as observer in relevant meetings, including the project steering committee meetings; such contribution to be done taking due account of IMO's staff constraints. IMO's activities under its integrated technical cooperation program which complement the project activities are an integral part of its contribution to the project. When needed, expenses related to IMO participation in accordance with project objectives and requirements will be covered by the project.

Specifically, it is anticipated that under component B, IMO will provide in-kind support and advice on:

- Seminars and workshops on issues related to the project execution.
- Development of the national contingency plans for Kenya, Mozambique, South Africa and Tanzania, their testing and updating as necessary and these countries' becoming a part of the regional plan.
- Development of an oil spill response manual.
- Training of trainers.
- Provision of training to national experts in international maritime law.
- Development of a methodology to enable governments to carry out baseline studies to identify the key environmental resources of the region and assign indicative values.
- Development of a regional database and geographic information system on the marine environment, marine and coastal resources, ship movements, ship waste and sea-based activities.

Under component C, on:

- Ratification of IMO conventions intended to protect the marine and coastal environment from pollution from ships and to improve the safety of navigation.
- Drafting of national legislation in accordance with the provisions of these IMO conventions and the formulation of timetables to implement these conventions.
- Facilitation of regional agreements and development of a regional contingency plan.

Under component D, on:

- Organizing workshops to strengthen capacity for port state control.
- Widening to include Madagascar and Comoros, and support for implementation of the existing regional agreement on port state control.
- Training of port state control inspectors.
- Regional training and seminars on maritime traffic management and pollution prevention, and on measures to protect coastal and marine biological resources.
- Strengthening of the technical capabilities and the institutional and coordinating arrangements among the concerned states to collectively prevent, manage, and respond to transboundary marine pollution.

International Chamber of Shipping and the international tanker industry ($3.6 million equivalent to equipping vessels which is now mandatory under IMO conventions)

The International Chamber of Shipping is an industry forum aimed at promoting safe and environmentally-sound shipping. All vessels will be encouraged to equip their vessels with the equipment necessary to fully use the electronic charts, navigational aids, and the maritime safety information transmitted to the vessels.

Beneficiary governments ($1.9 million in kind and $0.9 million for Mozambique Bazaruto vessel)

The governments of the beneficiary countries will provide in-kind resources during project implementation. Specifically, they will:

- Support relevant staff out of their own resources to participate in seminars, workshops, and training courses.
- Appoint and provide the resources for coordination of activities at the national level, such as an office within a ministry of environment or transport.
- Participate in promotional activities and public awareness campaigns and the like aimed at raising awareness of the project, its benefits, and the role that the public can play to reduce the risk of catastrophic damage from oil and chemical spills.
- Provide support to a regional center in accordance with agreements made during the implementation of the project.

Local oil industry ($0.9 million)

The local oil companies will participate in the preparation and testing of the oil spill contingency plans for Kenya, Mozambique, South Africa, and Tanzania. They will participate in the development and testing of the regional oil spill contingency plan. They will pledge the use of their oil spill equipment should this be needed to address an oil spill. They will also send appropriate staff to participate in seminars, workshops, and training exercises to share their insights and expertise.

International oil industry ($0.4 million)

Similar to the local oil companies, the international companies will participate in the preparation and testing of the oil spill contingency plans and sending their staff to participate in seminars, workshops, and training exercises to share their insights and expertise. They will also install the equipment on their vessels necessary to fully use the electronic charts, navigational aids, and the maritime safety information transmitted to the vessels. Finally, they will participate in the assessment of the feasibility of the precision navigational system.