Document of
The World Bank

Report No: 27951

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF US$ 3.7 MILLION

AND A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 2.6 MILLION
(USD 3.8 MILLION EQUIVALENT)

TO THE

GOVERNMENT OF SAINT LUCIA

FOR A

DISASTER MANAGEMENT PROJECT II

{PROJECT DATE}

Finance, Private Sector and Infrastructure Department
Caribbean Country Management Unit
Latin America and Caribbean Region

CURRENCY EQUIVALENTS
(Exchange Rate Effective March 31, 2004)

Currency Unit	=	
EC$2.688	=	US$1
US$1.45013	=	SDR

FISCAL YEAR
April 1 – March 31

ABBREVIATIONS AND ACRONYMS

CDERA	Caribbean Disaster Emergency Response Agency
CDMP	Caribbean Disaster Mitigation Project
ECCB	Eastern Caribbean Central Bank
EIA	Environmental Impact Assessment
EOC	Emergency Operations Center
ERDMP	Emergency Recovery and Disaster Management Project
ERP	Emergency Recovery Project
EU	European Union
GOSL	Government of Saint Lucia
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IADB	Inter-American Development Bank
LAC	Latin America and the Caribbean
MCWTPU	Ministry of Communications, Works, Transport and Public Utilities
MPDEH	Ministry of Physical Development, Environment and Housing
NEMO	National Emergency Management Office
NHC	National Hurricane Center
NHMC	National Hazard Mitigation Council
OECS	Organization of Eastern Caribbean States
PAHO	Pan American Health Organization
UNDP	United Nations Development Program
OCHA	Office for the Coordination of Humanitarian Affairs
USGS	United States Geological Survey

Vice President:	David de Ferranti
Country Manager/Director:	Caroline Anstey
Sector Manager/Director:	John H. Stein/Danny M. Leipziger
Task Team Leader:	Francis Ghesquiere

SAINT LUCIA
LC Disaster Management Project II

CONTENTS

Page

A. STRATEGIC CONTEXT AND RATIONALE 1
1. Country and sector issues 1
2. Rationale for Bank involvement 2
3. Higher level objectives to which the project contributes 3
B. PROJECT DESCRIPTION 4
1. Lending instrument 4
2. Project development objective and key indicators 4
3. Project components 4
4. Lessons learned and reflected in the project design 6
5. Alternatives considered and reasons for rejection 7
C. IMPLEMENTATION 7
1. Partnership arrangements (if applicable) 7
2. Institutional and implementation arrangements 7
3. Monitoring and evaluation of outcomes/results 8
4. Sustainability 9
5. Critical risks and possible controversial aspects 9
6. Loan/credit conditions 10
D. APPRAISAL SUMMARY 10
1. Economic and financial analyses 10
2. Technical 11
3. Fiduciary 11
4. Social 12
5. Environment 12
6. Safeguard policies 13
7. Policy Exceptions and Readiness 14
Annex 1: Country and Sector or Program Background 15
Annex 2: Major Related Projects Financed by the Bank and/or other Agencies 18
Annex 3: Results Framework and Monitoring 19

Annex 4: Detailed Project Description 23
Annex 5: Project Costs 26
Annex 6: Implementation Arrangements 28
Annex 7: Financial Management and Disbursement Arrangements 30
Annex 8: Procurement 33
Annex 9: Economic and Financial Analysis 38
Annex 10: Safeguard Policy Issues 43
Annex 11: Project Preparation and Supervision 51
Annex 12: Documents in the Project File 52
Annex 13: Statement of Loans and Credits 53
Annex 14: Country at a Glance 54

A. STRATEGIC CONTEXT AND RATIONALE

1. Country and sector issues

Following average growth rates in Saint Lucia of over 6 percent per year in the 1980s, the growth of economic output slowed to 3 percent growth rate in the early 1990s and down to a short period of negative growth in recent years. This declining performance was mainly driven by a drop in production in the agricultural sector which, between 1996 and 2000, contracted by about 26 percent, reducing its share in the economy to 8 percent in 2000 compared to over 14.5 percent in 1990. The slump in agriculture stemmed mainly from a substantial reduction in banana production. As a result, the government has been seeking to stimulate growth in other sectors, such as the service sector, representing 75% of GDP in 2001. It is trying to make Saint Lucia more competitive internationally and attractive to foreign investors. Expected growth in tourism should provide substantial benefit to the national economy. Investments in infrastructure and the changes in the Organization of Eastern Caribbean States (OECS) telecommunications sector regulatory framework are reducing the cost of doing business to encourage new types of investment. The government is also focusing on human resource development.

A serious issue confronting Saint Lucia's development is the vulnerability of its population and its economy to natural disasters, which can lead to serious effects on the productive sectors of the economy such as agriculture and tourism and particularly serious impacts on communities and households. Natural disasters impose large costs on the country's fragile economy and exacerbate poverty.

Since natural disasters recur at frequent intervals, preparedness and mitigation measures are important for minimizing their impact. The Caribbean nations' low level of preparedness, lack of mitigating measures and limited disaster response capability was evidenced most dramatically in recent years by the devastating impact of Hurricane Georges on St. Kitts and Nevis in September 1998. To improve preparedness and provide mitigation, beginning in 1998 an Adaptable Program Loan (APL), the Emergency Recovery and Disaster Management Program (EDRMP) (PAD Report No. 18655) was developed to support physical and institutional efforts for disaster recovery and emergency preparedness and management in five OECS member countries (Saint Lucia, Dominica, St. Kitts & Nevis, Grenada and St. Vincent and the Grenadines). The program has supported the following set of activities:

- Physical prevention and mitigation investments: Key social and economic infrastructure have been protected and strengthened before disasters strike in order to reduce the likelihood of loss of life and assets.
- Capacity building and strengthening disaster management capacity: the capacity of national emergency management disaster preparedness agencies has been strengthened to enable them to perform more effectively.
- Community preparedness: community-level disaster committees have been organized, trained and equipped to enhance their role in disaster preparedness, mitigation and recovery.

It was considered at the time that setting up individual loans for all five countries involved in the program would be inefficient. As a result, the Bank opted to set up a regional facility to address disaster risks rather than a series of emergency operations with individual countries. The typical APL approach was modified to provide an horizontal dimension that would allow countries to join in different phases based on their stages of preparation (APL 1-3). At the same time, it was also considered more efficient and forward looking to set up a contingent facility with allowance for post-catastrophe mitigation work that could be called upon in the event of a natural disaster during project implementation (APL4). The emergency funding would take advantage of the shared risk characteristics of the group of countries.

The first phase of the APL was appraised in December 1998 for Saint Lucia, St. Kitts & Nevis and Dominica (APL1). The second phase appraised in May 2002 involved similar projects for St. Vincent & the Grenadines and Grenada (APL2). A third phase was originally planned to allow the Bank to provide continued support for long-term strengthening of disaster management capacity, to focus on continuing and enhancing the process of community outreach and involvement, and to finance additional physical investments for which feasibility and detailed engineering studies would be carried out during APL1 & APL2. However, resources set aside for this phase were absorbed in the design of APL2. It was agreed at the time that any additional World Bank support would have to take the form of new and separate projects and/or supplemental loans and credits. That is the case with this proposed project. A fourth "floating" phase (APL4) will remain available until the scheduled closing date of APL2 in January 31, 2006. This tranche makes financial resources available to the Government of any of the five participating countries should a severe natural disaster strike during the program period.

The APL1 project in Saint Lucia was implemented satisfactorily and achieved all of its objectives. The government is keen to build on the success of this first project to further reduce the island vulnerability to natural disasters. Clear benefit could be derived from an extension of the works program completed successfully under the previous project, such as the small mitigation program implemented by the Ministry of Communications, Works, Transport and Public Utilities (MCWTPU); the retrofitting of schools as emergency shelters implemented by the Ministry of Education; and retrofitting of health facilities by the Ministry of Health. The project would also undertake works designed under the first project such as the coastal protection works for Dennery Village. The emergency preparedness and response capacity in the country would be further improved with the construction of an Emergency Operations Center (EOC) for the National Emergency Management Office (NEMO). The institutions responsible for educating the public about the building codes and enforcing it, territorial planning, vulnerability assessment, and insurance of public assets, namely the Ministry of Physical Development, Environment and Housing (MPDEH) and the Ministry of Finance would benefit from further strengthening.

2. Rationale for Bank involvement

The World Bank has a unique capacity to be involved in this project. It was the lead sponsor for the recently completed lending operation. While other donors such as the Organization of American States (OAS), the Pan American Health Organization (PAHO) and agencies of the United States Government provided technical assistance and limited investments in the First

Phase (APL1), they lack the financial and technical capacity to finance works and technical assistance for the requisite institution building. In addition, the Bank has considerable experience with disaster mitigation and emergency preparedness throughout the Latin America and the Caribbean region and the world (see Annex 2).

3. Higher level objectives to which the project contributes

Within the framework of the sub-regional vision and strategy developed by the OECS Secretariat and the Eastern Caribbean Central Bank (ECCB) as well as the country-specific Medium-Term Economic Strategy Papers, the central goal of the World Bank Group's assistance to the Eastern Caribbean sub-region for the FY 02-06 Country Assistance Strategy (CAS) period is to help reduce poverty through (i) reduction of income insecurity (volatility) and vulnerability at aggregate and household levels; and (ii) human and institutional development. It emphasizes that a key element of the income insecurity and vulnerability inherent in item (i) is the frequency of natural disasters.

The CAS discussed by the Board on June 28, 2001 notes that natural disasters can cause major economic damage and necessitate unforeseen public spending. It notes, for example, that the cost of damage caused by Hurricane Georges in St. Kitts and Nevis was about 140 percent of GDP and has been the primary source of the country's recent fiscal difficulties. It also notes the linkage of the tourism industry to the vulnerability of infrastructure to natural disasters. It notes that to reduce this vulnerability there is a need to complement the rebuilding of damaged infrastructure with comprehensive disaster mitigation measures such as regular maintenance, appropriate zoning, hazard mapping, establishment/enforcement of building codes and disaster information mechanisms.

In line with the CAS objectives, this project would first contribute to reduce income volatility of the country by reducing its vulnerability to natural disasters. Second, the project would also contribute to poverty alleviation, taking into account that the poor are generally the most vulnerable to natural disasters. Disaster mitigation and institutional capacity building would in fact limit the negative impacts of disasters by strengthening public and private infrastructure and improving public responsiveness. The poor, often located in the most sensitive areas, such as flood prone areas, would directly benefit from these measures.

B. PROJECT DESCRIPTION

1. Lending instrument

The proposed project will be implemented as a Standard Investment Loan (SIL) to be disbursed over a period of five years. The project cost is US$8.83 million (US$8.94 if front fee is included), and will be financed by a Loan of US$3.70 million and a Credit of SDR2.6 million (US$3.80 million equivalent). The Government of Saint Lucia will finance the remaining US$1.34 million.

2. Project development objective and key indicators

The project aims at further reducing the country's vulnerability to adverse natural events (hurricane, floods, etc.) through investment in risk management activities. As such, the objectives of the project are to further strengthen (a) infrastructure against the impact of adverse natural events (hurricanes, flooding, etc.) through the implementation of physical mitigation measures; (b) the response capacity in case of adverse natural event (hurricane, flooding, etc) through capacity building, equipment purchase and investment in emergency infrastructure; and (c) the institutional capacity of the various ministries and agencies dealing with disaster management through the provision of adequate facilities, critical equipment, technical assistance and training.

Indicators will be:

(a) the percentage of population protected by key mitigation works on infrastructure and emergency facilities have increased substantially;
(b) the country's institutional capacities to prepare for and respond to disaster emergencies are strengthened.

3. Project components

	Components	*Project cost US$ million*
1	Physical Prevention and Mitigation Works	5.96
2	Strengthening Emergency Preparedness and Response	1.38
3	Institutional Strengthening	0.42
4	Project Management	0.30
	Contingencies	0.80
	Front-end-fee	0.08
	Total	8.94

Component 1. Physical Prevention and Mitigation Works

(a) Coastal protection works for Dennery Village. The village, of 5,000 inhabitants, is located on the East coast. Its vulnerability to floods and storms have increased in the recent years and was identified in the first project as a priority. An engineering study on coastal protection was completed, and recommended a sea wall to protect a large inhabited part of the town from flood.
(b) Rehabilitation and reconstruction of two bridges. Two vulnerable bridges will be rehabilitated with higher construction standards.
(c) Drainage, river walls and slope stabilization. This will include (i) rehabilitation of the La Clery Main Drain/Ravine and (ii) implementation of small mitigation works, with gabion rubble walls and slope protection. The use of gabion works has proved to be an effective, easy and labor intensive way to implement drainage works.
(d) Retrofitting of Schools. In addition to the 16 schools retrofitted in the first project, three more have been selected. Emergency equipment, sanitary facilities and improved drainage will be provided.
(e) Retrofitting of Health Centers. Health Centers will be strengthened to ensure that they can assist communities during disasters.
(f) Procurement of additional stock of gabion baskets, mattresses and geotextile. These materials will be stockpiled for use in this project and in the future.
(g) Technical audits for the Coastal protection works at Dennery Village and other works components.
(h) Training and capacity building for the Technical Service Division of the (MCWTPU). This agency is responsible for implementing and maintaining many of the physical prevention and mitigation works.

Component 2. Strengthening Emergency Preparedness and Response

(a) Construction of the EOC and Central Warehouse. A site has been chosen for its headquarters, the EOC, which will be constructed under the project. The building will also house the central warehouse where emergency equipment and supplies will be stored until needed.
(b) Additional Satellite Warehouses. Satellite warehouses will be established throughout the country to store emergency equipment and supplies within immediate reach of communities.
(c) Installation of water tanks in shelters. Water tanks will be procured and installed in the new shelters.
(d) Technical assistance and training for the NEMO. This will include: (i) Emergency Shelter Manuals – Volumes 1 & 2; (ii) Shelter Regulation and what to bring to a shelter; (iii) Training in shelter management, telecommunication & supply management; (iv) National Emergency Response Plan; (v) Production of video on how to prepare for and deal with disaster events.
(e) Specialized disaster equipment: (i) Strong box for pre-positioning items; (ii) Shelter Emergency Supplies; and (iii) Additional communications equipment

Component 3. Institutional Strengthening

(a) Building code training and sensitization. A building code was developed during the first project. It was printed and initial training was given to public officials and contractors. Further training and sensitization will be carried out under this project.
(b) Technical assistance in territorial planning. The objective will be to improve enforcement of and develop territorial planning in the country through a training program targeting the planning and building officers and consulting work.
(c) Vulnerability assessment and hazard mapping. Three zones including flood-prone areas have been identified at Anse la Ray, Dennery and Soufriere, Baboneau/Boguis. Other studies will be identified in the course of the project.
(d) Study on vulnerability and risk transfer of government assets. An inventory of public buildings was undertaken during the first project. This study will develop a strategy to optimize risk transfer.

Component 4. Project Management

(a) Technical assistance to the Project Coordination Unit (PCU), with the recruitment of a project accountant; a technical engineer; and support staff. Project management services, office equipment and supplies are also included.
(b) Technical Audits.

4. Lessons learned and reflected in the project design

- The experience of implementation during the APL1 in Saint Lucia showed that good communication is important between the PCU and the implementing agencies. Poor communication between the PCU and the other agencies delayed implementation, especially at the beginning of the project. With an experienced PCU already in place, these types of delays will be much less likely.
- Because of the nature of the first project, designs for works did not exist at the beginning of the project and needed to be prepared during the early stages of the project. The design work led to long delays. Works for this proposed project which will be undertaken during the first year, particularly the Dennery flood protection works, are well advanced (designs, drawings, bills of quantities are available, and Terms of Reference (TOR) are ready for other engineering designs). Implementation can begin soon after effectiveness.
- Minor works (slope protection, gabion works) carried out by the MCWTPU proved to be one of the most efficient and cost effective way to implement small mitigation works. The proposed project will reflect this successful pattern by including additional such works.
- Based on the experience with the previous Emergency Recovery and Disaster Management Project (ERDMP), the team estimates that the civil works to be procured under the Loan/Credit will generate at least 600 to 700 jobs for periods between 3 months and 48 months, equivalent to 4,000 man-months.

5. Alternatives considered and reasons for rejection

The alternative of not considering a project was envisaged. In such a case, responsibility of pursuing the disaster vulnerability reduction program identified under the first project would fall on the island. The risk that the program would slow down and would not reach economic viability was considered very high and the alternative was rejected.

Funding earmarked in the original OECS Emergency Recovery and Disaster Management program was considered for this operation but was no longer available at the time of preparation. The Saint Lucia ERDMP was part of the first phase of an APL operation aimed to support the physical and institutional efforts of the five member countries of the OECS to strengthen disaster recovery capacity and emergency preparedness management. The program was designed to cover all five islands in the first two phases (APL1 and APL2), with a third phase available for additional activities. Funding for this phase was eventually allocated to APL2 and was no longer available for this operation.

C. IMPLEMENTATION

1. Partnership arrangements (if applicable)

Arrangements are being made to coordinate with the Caribbean Development Bank (CDB), the OAS and the Caribbean Disaster Emergency Response Agency (CDERA) on the hazard-mapping component of the project using harmonized methodologies and a coordinated approach.

2. Institutional and implementation arrangements

The PCU, under the MPDEH was responsible for coordinating implementation under the previous disaster mitigation project EDRMP and is currently coordinating the implementation of the ongoing Emergency Recovery Project (ERP), which is assisting the Government of Saint Lucia to improve security in airports and seaports. Though the PCU was slow to begin activities under the EDRMP, it is now satisfactorily staffed and has acquired expertise in procurement and financial management. The Government of Saint Lucia is interested in further developing its capacity to implement projects through one centralized department and has proposed that the PCU be responsible for coordinating both the Disaster Management Project II (DMPII) and the HIV-AIDS project currently under preparation. It was agreed that the PCU would be strengthened under this project if needed. A technical engineer/procurement assistant and a financial expert have been contemplated for DMPII and the HIV-AIDS projects respectively. The possibility of moving the PCU to the Ministry of Finance is under consideration.

As in ERDMP and ERP, the PCU will be responsible for coordinating the implementation and the financial management of the proposed project.

The PCU will be responsible for coordinating implementation agencies, keeping accounts, and reporting to the Bank. The MCWTPU will contract and supervise the flood control works at Dennery and much of the small mitigation works. The Ministry of Education and the Ministry of

Health will contract and supervise mitigation works under their respective jurisdictions. NEMO will implement the Emergency Preparedness component. The Ministry of Physical Development, Environment and Housing and the Ministry of Finance will implement the Institutional Strengthening component. The respective line agencies will designate a contact person who will work closely with the PCU and provide progress reports to the PCU on a quarterly basis. An operational manual, summarizing the implementing and reporting arrangements and procurement rules will be a condition of effectiveness.

The PCU has in place an adequate budgetary and financial management system. Moreover, the PCU has experience in managing Financial Management (FM) aspects of Bank projects through its involvement with two previous Bank projects. The PCU has a full complement of experienced staff, is well versed in Bank financial management and procurement procedures, and has performed satisfactorily in the past. In addition, the PCU has experience with report-based disbursement procedures. With full implementation of the measures in the action plan presented in Annex 7, the PCU would have in place adequate financial management arrangements that meet the Bank's minimum fiduciary requirements for the proposed project.

The flow of funds for the proposed project calls for the loan and credit funds to be channeled to the project through a Special Account denominated in US Dollars to be established by the PCU in a commercial bank. The PCU will operate a local currency Special Account, to finance project expenditures in local currency, where Bank funds will be periodically transferred (in an amount to cover no more than 30 days of projected expenditures) and will be operated in accordance with the procedures and guidelines set forth in the Bank's Disbursement Handbook. The PCU will also operate a Project Account for the purpose of receiving counterpart funds from the Saint Lucia Government and provide the counterpart funds for the payment of civil works, consultancy services, goods and other items. This account will also be maintained in a commercial bank.

The initial deposit into the special account will be in US dollars. Since the PCU has extensive experience with financial management of Bank projects and the preparation of Financial Monitoring Reports (FMRs), disbursements will be made based on FMRs to be submitted to the Bank quarterly, along with a withdrawal application.

3. Monitoring and evaluation of outcomes/results

The PCU will be responsible for monitoring and evaluation of outcomes and results. A list of expected outcomes and results is given in Annex 3. These will be monitored by the PCU and World Bank missions.

4. Sustainability

The Government of Saint Lucia is fully committed to this disaster risk management as demonstrated in the Prime Minister's address to Parliament on the opening of the fiscal year 2004, and the active participation of numerous institutions in the National Hazard Mitigation Council. Other indicators of the Government's commitment to risk management is the recent passing into law of a new building code revised to include disaster risk.

A fundamental aspect of the project is to increase resilience of infrastructure, which should result in reduced maintenance and repair costs. Nevertheless, an operations and maintenance plan will be prepared in advance and the government will make a commitment to providing the necessary resources to carry out the maintenance stipulated in the manual. A review of this plan will be carried out annually and submitted to the Bank no later than three months prior to the beginning of each fiscal year. This report should include an assessment of operation and maintenance needs for each asset retrofitted or built under the project together with indication of the responsible entity and budget made available.

A maintenance manual has been prepared for the largest component of the project, Dennery flood protection. It will be used by the MCWTPU after the works are implemented.

To ensure the sustainability of the national emergency management agencies, there will be a covenant in the Loan/Credit Agreements that the government will maintain adequate staffing at NEMO (at least three permanent staff) and provide a sufficient operating budget for NEMO throughout the project implementation period.

5. Critical risks and possible controversial aspects

Critical risks	Proposed measures	Level of risk
Implementation delays. In the previous project delays resulted from two factors: preparation of engineering designs and preparation of TOR for technical assistance.	The largest of the proposed works, flood protection works in Dennery, is already in an advanced stage of preparation. Complete bidding documents, including drawings, engineering design and bills of quantities are ready for the first year of implementation. Terms of Reference for most other components have already been prepared during project preparation.	M
Inadequate staffing and experience in the PCU. This risk stems from a lack of experience with financial management and procurement	The PCU is now staffed with individuals who have experience with the successful implementation of two projects. Staff at the PCU, and to a minor extent, at the MCWTPU are now trained and experienced in Bank procurement, which should minimize delays. The Borrower has agreed to maintain staff with the same level of qualification for this project.	M

Project complexity: several ministries will be coordinated by the PCU	Project is designed on current satisfactory modus operandi. A new improved operation manual is being prepared. A project launch workshop will provide training to most actors in the project.	M

6. Loan/credit conditions

Effectiveness condition

The following condition will be complied with prior to project effectiveness:

(a) The deposit of at least US$50,000 in counterpart funds for the first year of project implementation;
(b) The auditors for the project have been appointed; and
(c) The Operational Manual, including environment guidelines has been issued and put into effect.

Particular Covenants

A Director, Deputy Director, a Training Officer and an Administrative Assistant with the requisite experience will be maintained at NEMO.

A Project Coordinator, a Deputy Project Coordinator, and a Technical Engineer (Procurement Assistant) with the requisite experience will be maintained at the PCU.

A progress report, including a procurement plan and action matrix will be produced and sent to the Bank every 6 months. Reporting needs will be reviewed at the beginning of each fiscal year.

An Operation and Maintenance report will be prepared at the beginning of the project and updated every year.

D. APPRAISAL SUMMARY

1. Economic and financial analyses

A complete economic cost benefit analysis was conducted to determine the economic viability of the Dennery component, as it is the most significant component to be financed by the project, representing, approximately 50% of all physical works to be constructed. The analysis presented in Annex 9 demonstrates the overall viability of this component. The analysis yielded an economic rate of return of 23%, and an economic net present value of EC$ 3.85 millions based on a discount rate of 12% representing the opportunity cost of capital in Saint Lucia. The main quantifiable benefits included in the analysis were (i) avoidable road reconstruction costs assuming a substantial storm event every ten years that could result in storm surge flooding and road damage; and (ii) loss in commercial revenue from consumption of food and services along

the project site if there were no beach area and there was a diversion away from the coastline of the village. Other benefits, such as the cost of relocating residents in the event of a storm, the opportunity cost of the increased vehicle operating costs if there was a diversion, the aesthetic and recreational benefits, or the cost of reconstructing damage to the Daito facility were not considered.

Apart from the economic evaluation carried out for the Dennery village coastal protection works, no economic analysis was warranted for the other physical civil works components of the project, due to the small individual amounts of investments required for their implementation, generally less than US$ 500,000.

2. Technical

The technical studies for the major work component at Dennery Village (including the two nearby rivers bank flood protection) was commissioned to and carried out by an internationally reputable Consulting Engineering Firm and the review of their report by the project team indicated that the proposed design was of good quality. The engineering designs of the bridge rehabilitation component and the small gabions mitigation works were carried out by the technical department of the MCWTPU and were based on sound technical principles and construction practices common in Saint Lucia. The detailed designs for the retrofitting of schools and clinics and for the satellite warehouses will be commissioned to local firms and carried out in line with the OECS Building Code requirements and with previous local experience under the general supervision of the technical departments of the respective implementing agencies. Finally, the project team raised one concern during the identification and pre-appraisal missions regarding the size of the facility designed to house the EOC, and are expecting the Government to propose appropriate remedial actions.

3. Fiduciary

The PCU will be responsible for coordinating the implementation and the financial management of the proposed project. The PCU has in place an adequate budgetary and financial management system. Moreover, the PCU has experience in managing FM aspects of Bank projects through its involvement with two previous Bank projects. The PCU has a full complement of experienced staff, is well versed in Bank financial management and procurement procedures, and has performed satisfactorily in the past. In addition, the PCU has experience with report-based disbursement procedures. With full implementation of the measures in the action plan presented in Annex 7, the PCU would have in place adequate financial management arrangements that meet the Bank minimum fiduciary requirements for the proposed project.

Annual project financial statement will be audited in accordance with International Standards on Auditing, by the Auditor's General Department in accordance with TOR acceptable to the Bank. The annual financial audit will include an opinion on the financial statements of the project and a memorandum on internal controls.

The PCU will prepare, if needed, an action plan to address any issues and recommendations contained in the audit reports. The action plan and follow-up activities would be communicated to the Bank.

4. Social

In general, the social aspects of the project are positive, beneficial and ultimately affect the population at large. The institutional strengthening and capacity building elements of the program assist in creating a trained, responsive and competent public sector, improving the country's ability to endure and manage disaster activities. The program of small works improvement, and the emergency response plan will contribute directly to population survival by improving sheltering and evacuation systems and by reinforcing existing flood and landslide control structures to reduce the potential for storm related consequential damages. The shore defenses planned for Dennery, the subject of a separate environmental assessment, will directly contribute to the continued survival of the community, its inhabitants and economy. Finally, other small works improvements are designed to assure that critical transportation structures remain operational during a state of emergency, contributing directly to the well being of the population at large.

The social segments affected by the project, directly include all inhabitants of the country without bias to age, or sex. Many of the small works as well as the constructions at Dennery are planned for rural, non-tourism related areas. As a result, the social benefit in terms of economic segment is slightly biased providing some greater benefit to the moderate and lower economic income groups with improved landslide protections and sheltering facilities. Dennery, in particular, is economically stressed and has gradually become increasingly reliant on its fishing and shore related activities. This has resulted from the effects of previous disasters, the loss of manufacturing jobs in the garment industry and declines in agricultural sector. The construction of shore defense works in this area will directly improve the protection of this low to moderate income community from catastrophic losses from storm damage.

5. Environment

The project is considered category B due principally to the coastal defense works planned for the town of Dennery. Other works planned under the program are largely small works consisting of repair, rehabilitation, and heavy maintenance activities. These works will likely be classified as category C with environmental impacts limited to the actual construction phase of the individual activities.

The project will finance the construction of flood protection works in the village of Dennery on the Atlantic Coast of the Island. That proposed program of works was designed under the previous project. Six scenarios have been analyzed to evaluate how best to protect the area (1) Do Nothing; (2) Sand Management; (3) Buried Revetment/Sand Management/River Ban Protection; (4) Same as 3 with one Breakwater; (5) Same as 3 with two Breakwaters; and (6) Same as 5 with Limited Land Reclamation and Improved Drainage.

After extensive consultations and a full environmental impact assessment, option six was eventually chosen. The works will comprise the construction of (i) a 415 meter long buried stone revetment that will enhance the shoreline and protect the residences located along the beach; (ii) three break waters of approximately 50 meters long each designed to reduce erosion and scouring actions, and improve sand replenishment along the shoreline; (iii) reclamation of about 2000 square meters of land at the northern side of the site, including a 60 meter long armor berm to protect the reclaimed land from sea surge; (iv) appropriate bank revetment along critical segments of two rivers delimitating the Southern and Northern part of the village; and (v) works aimed at enhancing the drainage system in and around the village.

The project will also finance the construction of an EOC and the continuation of a program of small mitigation works, including the construction or repair of retention walls, river wall protection, drains, and the retrofitting of schools and health centers and two bridges. The Project Operation Manual will set the criteria for the need for and extent of environmental assessments for these civil works. The preparation of the Operation Manual is a condition of effectiveness for the project and the use of the environmental guidelines is a covenant on the civil works components. Environmental Guidelines to be included in the project manual have already been prepared.

No significant negative environmental impacts have been identified resulting from the program. The works at Dennery will not negatively affect any of the local natural systems in a significant way and will provide an increased level of protection to the shoreline community from storm damage. Furthermore, the planned constructions will assist in reversing the beach erosion effects resulting from the construction of the Dennery harbor and fish-processing center completed under another assistance program in 1992. The anticipated benefits to the community through loss prevention are significant in terms of their social, economic and cultural elements. Perhaps the greatest impact anticipated is the reduction in the potential for induced community relocations due to improved coastal stability. Displaced families, for lack of other options, have relocated to vacant lands in the adjacent watershed protection areas. These relocations have historically resulted in increased damage to watershed slopes increasing runoff and erosion potential. Limiting coastal damage will reduce these relocations reducing damage to the already stressed watersheds.

The other elements of the program include institutional strengthening and capacity building as well as the improvement of minor works projects throughout the country. No significant negative impacts have been identified associated with these activities.

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]

7. Policy Exceptions and Readiness

No relief from operations or policy is sought under this program. The only departure from Bank policy is the enhanced environmental vigilance required under the small works projects initiatives. While these are considered category C as defined under OP4.01, additional environmental guidelines have been prepared for the assessment and conduct of the small works planned under this program.

The guidelines include a screening system to assure compliance with Bank environmental policy and Saint Lucian environmental law. The screening procedure first identifies whether an environmental assessment would be required due to the nature of the activity contemplated. If this is required (i.e. the activity triggers the Category B requirement), the activity will either be rejected or an environmental assessment will be completed as required under Bank policy and Saint Lucian environmental law. Given the nature of the works proposed thus far, this is a highly unlikely scenario.

If an environmental assessment is not required, a checklist has been developed which is then used to identify activities that may have associated environmental consequences, such as paint and solvent usage, worker sanitation, and noise management. For those activities, a set of standard contract clauses are provided to be attached to the project bidding documents which are designed to assure that these anticipated effects are managed. These requirements are reviewed internally by the appropriate Saint Lucian authorities and then presented with the formal approval.

The guidelines and implementation procedures are consistent with Bank policies and operate within the framework of Saint Lucian environmental management policies. PCU implementation procedures include the provision for environmental review compliant with the newly enacted Saint Lucian Land Planning Act.

Readiness. Detailed designs, specifications, BOQs and TOR for most of the activities have been prepared and reviewed by the Bank. The project is deemed at this stage ready for implementation.

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

Annex 1: Country and Sector or Program Background

SAINT LUCIA: LC Disaster Management Project II

Saint Lucia is part of the Windward Islands. The interior of the island is mountainous, but there is more flat land than in Dominica, Grenada or St. Vincent. The soil is generally fertile and the banana industry (together with other agriculture products) makes Saint Lucia the biggest exporter of agricultural products among the OECS member countries. Tourism has become the main foreign exchange earner in the country in recent years. Despite strong social indicators - the UNDP Human Development Index classifies St Lucia as 88th out of 174 countries - and a well managed economy, poverty and unemployment are still persistent problems. Twenty-five percent of the population lives below the locally defined poverty line and the unemployment rate is around 18 percent.

Following average growth rates of over 6 percent in the 1980s, output growth rates slowed to 3 percent in the early 1990s and to about 2 percent in recent years. This weak performance was mainly driven by the agricultural sector which, between 1996 and 2000, contracted by about 26 percent, reducing its share in the economy to 8 percent in 2000 compared to over 14 1/2 percent in 1990. The slump in agriculture stemmed from substantial reduction in banana production which fell by 32 percent and 23 percent in 1997 and 1999 respectively, due mainly to changes in European Union agricultural policies. Growth, however low, was maintained by the broadly satisfactory performance of tourism, construction, utilities, commerce, and the financial sector which together represent about 75% of GDP (2001 values). Sound fiscal management over the last several years has allowed for the generation of strong public saving (averaging 8 1/4 percent of GDP during 1995-99). The Government is seeking ways to make Saint Lucia more competitive internationally and attractive to foreign investors. Investments in infrastructure and the changes in the OECS telecommunications sector regulatory framework are reducing the cost of doing business. The government is also focusing on human development.

A serious issue confronting Saint Lucia's development perspectives is the vulnerability of its population and its economy to natural disasters. The consequences of natural disasters in the small island states of the Caribbean from events such as hurricanes, earthquakes, floods and volcanic eruption on economic activities, property, human welfare and natural resources can be devastating. These events can lead to serious effects on the productive sectors of the economy such as agriculture and tourism, not to mention the impact on communities. St Lucia was hit by Tropical Storm Debbie in 1994 and Hurricane Allen in 1980. It has also been affected to lesser degrees by several other storms which damaged neighboring countries. Natural disasters impose large costs on the country's fragile economy and exacerbate poverty.

Since natural disasters recur at frequent intervals, preparedness and mitigation measures are important for minimizing their impact. Beginning in 1998, an Adaptable Program Loan (PAD Report No. 18655) was developed to support physical and institutional efforts of five OECS member countries for disaster recovery and emergency preparedness and management. The nations' low level of preparedness, lack of mitigating measures and limited disaster response capability had been evidenced by the devastating impact of Hurricane Georges on St. Kitts and Nevis in September 1998.

- The first phase of the program (APL1) was to support the immediate reconstruction and rehabilitation of infrastructure in St. Kitts & Nevis and to support disaster mitigation and institutional strengthening in St. Kitts & Nevis, Saint Lucia and Dominica.
- The second phase (APL2) was to support these same activities in Grenada and St. Vincent and the Grenadines.
- APL3 was to focus on additional physical investments identified through hazard mapping analysis and provide further long term institutional strengthening.
- APL4 was to provide contingency funding for any eligible OECS member in case of a severe natural disaster during the six year program period.

It was considered at the time that setting up individual loans for all five countries involved in the program would be inefficient. As a result, the Bank opted to set up a regional facility to address disaster risks rather than a series of emergency operations with individual countries. The typical APL approach was modified to provide an horizontal dimension that would allow countries to join in different phases based on their stages of preparation (APL 1-3). At the same time, it was also considered more efficient and forward looking to set up a contingent facility with allowance for post-catastrophe mitigation work that could be called upon in the event of a natural disaster during project implementation (APL4). The emergency funding would take advantage of the shared risk characteristics of the group of countries.

The first phase of the APL has been completed. APL2 is still under implementation. APL3 was not initiated because its funding was reallocated to APL2. APL4 has not been used. The APL1 project in Saint Lucia has met its objectives:

(i) Key economic and social infrastructure and facilities were strengthened to minimize damage and economic disruption from future natural disasters (pre-disaster works). There were important flood control, bridge strengthening and flood mitigation works, and schools were retrofitted as emergency shelters. A large amount of emergency equipment is now available for use in future disasters.

(ii) The objective of rehabilitating social and economic infrastructure following disasters was less relevant in Saint Lucia at that time.

(iii) The country's institutional capacities to prepare for and respond to disaster emergencies were strengthened. A seven member National Hazard Mitigation Council (NHMC) was established and a Disaster Preparedness and Response Act was passed in 2000. Other initiatives included: (a) revision of the National Disaster Emergency Management Plan; (b) strengthening the liaison with the private sector to implement the Plan; (c) proposing a National Building Code and preparing an action plan and legislation for implementation; (d) strengthening a hazard analysis and vulnerability mapping group; (e) implementing new procedures at the National Meteorological Service; (f) and strengthening the preparedness of communities through NEMO-sponsored training.

Although considerable progress was made under the APL1 in Saint Lucia, further work remains to be done. Coastal protection works for Dennery Village, which were designed under the

recently completed project, have yet to be undertaken. Many of the works completed successfully under the previous project need to be extended, such as retrofitting schools and health centers as emergency shelters and extending the successful construction of storm drain protection works using gabion baskets. The emergency preparedness and response capacity in the country requires further improvement with the construction of an EOC and additional equipment and training. The institutions responsible for the building code, territorial planning and vulnerability assessment need further strengthening.

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

SAINT LUCIA: LC Disaster Management Project II

Sector Issue	Project	Latest Supervision (PSR) Ratings (Bank-financed projects only)	
		(IP)	(DO)
Bank-financed			
Nicaragua - Natural Disaster Vulnerability Reduction Project (P064916), approval date: 04/03/2001, closing date: 03/31/2005.		S	S
OECS - Emergency Recovery and Disaster Management Program (P069923), approval date: 05/29/2002, closing date: 01/31/2006.		S	S
Mexico - Natural Disaster Management Project (P064887), approval date: 12/07/2000, closing date: 12/31/2004.		U	U
Honduras-Natural Disaster Mitigation Project (P064913), approval date: 05/30/2000, closing date: 04/15/2005		S	S
Colombia - Earthquake Recovery Project (P065263), approval date: 03/21/2000, closing date: 06/30/2004		HS	HS
Colombia - Urban Infrastructure Project (P006861) / 1996, approval date: 12/22/98, closing date: 06/30/2003		S	S
Other development agencies			
Colombia - Reconstruction of the Earthquake in the Coffee Belt (IADB)			
Jamaica - Recovery and Reconstruction from Flooding, 2002 (IADB)			
Disaster Prevention and Preparedness in relation to natural hazards (UN-OCHA)			
Colombia -Installation of a GIS and User Training for the Regional Autonomous Corporation (CAR) – 1989 (OAS)			
Reducing the Vulnerability of the Transport Sector to Natural Hazards, 2002 (OAS)			
Caribbean Disaster Mitigation Project (CDMP), 1993. (OAS-USAID)			

Annex 3: Results Framework and Monitoring

SAINT LUCIA: LC Disaster Management Project II

Results Framework

PDO	Outcome Indicators	Use of Outcome Information
(a) to further reduce the vulnerability of infrastructure to natural disasters (hurricanes, flooding, etc.) through the implementation of physical mitigation measures, improvements and repairs; and (b) to strengthen the institutional management and response capacity of the cognizant ministries and agencies for disaster management through the provision of facilities, critical equipment, technical assistance and training.	(a) The percentage of population protected by key mitigation works to infrastructure, flood control and hardening of emergency facilities by planning district. (b) Readiness and capacity of the country's institutions to prepare for and respond to disaster emergencies by planning district. (c) The country's institutional capacities to prepare for and respond to disaster emergencies are strengthened and improvements are seen in the individual planning districts.	To assure that strategic infrastructure can resist adverse natural events in the future and vulnerable areas are protected. To assure that population is made less vulnerable to adverse natural events. To ensure that the facilities and human resources put in place under the project are adequate to reduce or manage disaster risk and to respond to future emergencies.
Intermediate Results One per Component	**Results Indicators for Each Component**	**Use of Results Monitoring**
Component One: Physical Prevention and Mitigation Works (i) Protection works at Dennery (ii) Reconstruction of 2 bridges (iii) Drainage, river walls & slope stabilization (iv) Retrofitting of schools (v) Retrofitting of health centers	**Component One:** Contract milestones achieved for works completed at Dennery Village. # of bridges completed and contract milestones achieved. # of minor works completed by class. % of schools hurricane resistant . # of health centers retrofitted.	**Component One:** To track quarterly progress of the physical works undertaken completed to assess achievement of priorities and management success and provide an indication of the institutional strengthening progress for the MCWTPU in terms of persons trained.
Component Two: Strengthening Emergency Preparedness & Response (i) Construction of EOC and	**Component Two :** EOC and Central Warehouse	**Component Two:**

Central Warehouse (ii) Construction of additional Satellite Warehouses (iii) Installation of water tanks in shelters (iv) TA, planning and Training for NEMO v) Specialized disaster equipment	completed. Warehouses completed. Water tanks installed. Emergency plan completed; Shelter manuals completed; Shelter regulations completed;. # persons trained (shelter mgnt., telecommunications & supply mgnt completed); National Emergency Response Plan completed. Strong boxes and additional Communications equipment pre-positioned.	To track quarterly progress on the completion of various sub-components for emergency preparedness and response including equipment pre-positioning, installation of command structures, training, and institutional development to assure key milestones are met.
Component Three: Institutional Strengthening (i) Building Code Training and territorial TA (iii) Vulnerability Assessment and Hazard Mapping (iv) Study on Risk Transfer of Government Assets.	**Component Three:** # inspectors and staff trained on building codes and territorial planning. Assessments and hazard mapping completed. Study on risk transfer completed and reviewed.	**Component Three:** To assess quarterly progress in the strengthening of planning and enforcement institutions that provide vulnerability planning and building code development and enforcement to assure effectiveness of the strengthening program.

		Target Values					Data Collection and Reporting		
Outcome Indicators	**Baseline**	**YR1**	**YR2**	**YR3**	**YR4**	**YR5**	**Frequency and Reports**	**Data Collection Instruments**	**Responsibility for Data Collection**
(a) The percentage of population protected by key mitigation works to infrastructure, flood control and hardening of emergency facilities by planning district.	30%	35%	45%	55%	65%		Annual	Direct review and reporting captured under component 1	MCWT&PU / NEMO /PCU
(b) Readiness and capacity of the country's institutions to prepare for and respond to disaster emergencies by planning district.	50%	60%	70%	80%	85%		Annual	Direct review and reporting captured under component 2 and 3	MPDH&E /NEMO /PCU
Results Indicators for Each Component									
Component One:									
. Contract milestones achieved for works completed at Dennery Village.	-	10%	40%	70%	100%		Progress report	Works supervision , reports	MCWT&PU/PCU
. # of bridges completed and contract milestones achieved	-		1	2			Same	Same	MCWT&PU/PCU
. # of minor works completed by class	-	5	15	25	35		Same	Same	MCWT&PU/PCU
. % of schools hurricane resistant	55%	55%	60%	70%	80%		Same	Same	MHHS&FA/PCU
. # of health centers retrofitted	-0-	0	4	6	8		Same	Same	MHHS&FA/PCU

Component Two :									
. Warehouses completed			20%	100%			Progress report	Works supervision,	NEMO/PCU
. Water tanks installed			design	Yes				reports	NEMO/PCU
. Emergency plan completed			drafted	Yes			Same	Same	Same
. Shelter manuals completed			drafted	Yes			Same	Same	Same
. Shelter regulat. completed			drafted	Yes			Same	Same	Same
. # persons trained (shelter mgnt., telecommunications & supply mgnt completed).		20	40	60	80		Same	Same	Same
. National Emergency Response Plan completed.		1	2	3	4		Same	Same	Same
. Strong boxes and additional Communications equipment pre-positioned		0	5	10			Same	Same	Same
Component Three:									
. # inspectors and staff trained on building codes and territorial planning		15	50	75	100		Progress report	Training report	MPDH&E /PCU
. Assessments and hazard mapping completed.		0	1	2	4	4	Same	Progress report	Same
. Study on risk transfer completed and reviewed,			contract	complete.			Same	Consultant's report	Same

MCWT&PU - Ministry of Communications, Works, Transport and Public Utilities
MHHS&FA – Ministry of Health, Human Services, and Family Affairs
NEMO – National Emergency Management Organization
PCU – Project Coordinating Unit, Ministry of Physical Development
MPDH&E - Ministry of Physical Development, Housing and Environment
MCWT&PU - Ministry of Communications, Works, Transport and Public Utilities
MHHS&FA – Ministry of Health, Human Services, and Family Affairs
NEMO – National Emergency Management Organization
PCU – Project Coordinating Unit, Ministry of Physical Development

Annex 4: Detailed Project Description

SAINT LUCIA: LC Disaster Management Project II

Component 1 - Physical Prevention and Mitigation Works

Component 1 will be implemented by the Ministry of Communications, Works, Transport and Public Utilities (MCWTPU) for sub-component (a), (b), (c), (f) and (g); by the Ministry of Education for sub-component (d); and by the Ministry of Health for sub-component (e). The sub-components are described below:

(a) Coastal protection works for Dennery Village. A large densely populated part of Dennery village is subject to periodic flooding and is particularly vulnerable to storm surges. An engineering study to study options for flood protection and design proposed works for coastal protection was produced under the first project. It recommended a sea wall to protect a large inhabited part of the town from inundation. Works are expected to be contracted in two batches; a first one including the construction of a buried revetment and breakwaters; and a second one including all the flood protection works along the two rivers that surround the village of Dennery. The works are expected to last 30 months.
(b) Rehabilitation and reconstruction of Two bridges. Two vulnerable bridges will be rehabilitated. The proposed works are expected to last one year.
(c) Drainage, river walls and slope stabilization. This will include: (i) rehabilitation of the La Clery Main Drain/Ravine and (ii) implementation of small mitigation works gabion, rubble walls, slope protection. The use of gabion works has proved to be an effective, easy and labor intensive way to implement drainage works. The works will be contracted in four phases over the life of the project.
(d) Retrofitting of Schools. Emergency equipment, sanitary facilities and improved drainage were installed in 15 schools under the first project out of an intended 23 schools. Additional schools will be covered under this project.
(e) Retrofitting of Health Centers. Health Centers will be strengthened to ensure that they can assist communities during disasters.
(f) Procurement of additional stock of gabion baskets, mattresses and geotextile. These materials will be stockpiled for use in this project and in the future.
(g) Technical audits for the Coastal protection works at Dennery Village and other works components.
(h) Training and capacity building for the Technical Service Division of the MCWTPU. This agency is responsible for implementing and maintaining many of the physical prevention and mitigation works.

Component 2 - Strengthening Emergency Preparedness and Response

Component 2 will be implemented by the NEMO under the Prime Minister's Office. The sub-components are described below:

(a) Construction of the EOC and Central Warehouse. NEMO was established under the first project and serves as the secretariat for the National Hazard Mitigation Council (NHMC)

which is chaired by the Minister of Works and advises him on disaster related issues. A site has been chosen for its headquarters, the EOC, which will be constructed under the project. The building will also house the central warehouse where emergency equipment and supplies will be stored until needed.

(b) Additional Satellite Warehouses. Satellite warehouses will be established throughout the country to store emergency equipment and supplies within reach of communities.

(c) Installation of water tanks in shelters. Water tanks will be procured and installed in the new shelters.

(d) Technical assistance and training for NEMO. This will include: (i) Emergency Shelter Manuals – Volumes 1 & 2; (ii) Shelter Regulation and what to bring to a shelter; (iii) Training in shelter management, telecommunication & supply management; (iv) National Emergency Response Plan; and (v) Production of video on how to prepare for and deal with disaster events.

(e) Specialized disaster equipment: (i) Strong box for pre-positioning items; and (ii) Additional communications equipment

Component 3 - Institutional Strengthening

Component 3 will be implemented by the MPDEH for sub-component (a), (b) and (c); and by the Ministry of Finance for sub-component (d).

(a) Building code training and sensitization. A building code was developed during the first project. It was printed and initial training was given to public officials and contractors. Further training and sensitization will be carried out under this project.

(b) Technical assistance in territorial planning.

(c) Vulnerability assessment and hazard mapping (including flood-prone area at Anse la Ray, Dennery and Soufriere, Baboneau/Boguis and others).

(d) Study on vulnerability and risk transfer of government assets. An inventory of public buildings was undertaken during the first project. The objectives of the study would be to optimize the use of risk transfer markets (both conventional insurance and capital markets) to ensure that risk protection is provided where it is most needed. The risk transfer strategy would have two components to be contracted back to back. The first one involves rationalizing insurance purchasing procedures for relatively short return-period, high-frequency events. The second component involves commissioning the development of parametric indexes, designed to mimic catastrophe losses in St Lucia. These 'parametric index structures' would be based on the specific properties (locations and magnitudes/intensities) of the events (principally hurricanes, but also earthquakes), derived from high quality, rapidly published information on the events: provided by reputable independent monitoring agencies, such as the National Hurricane Center (NHC) and United States Geological Survey (USGS).

Component 4 – Project Management

This component will ensure that sufficient resources are available to coordinate and monitor the project during implementation and includes Technical assistance to the PCU, with the

recruitment of a quantity surveyor/technical engineer; a training program, office equipment and project management services are also included.

Annex 5: Project Costs

SAINT LUCIA: LC Disaster Management Project II

Project Cost By Component and/or Activity	Local US $million	Foreign US $million	Total US $million
Physical Prevention and Mitigation Works			
(i) Coastal protection Works for Dennery Village	0.412	2.332	2.744
(ii) Rehabilitation and reconstruction of two bridges	0.092	0.519	0.610
(iii) Drainage, river walls and slope stabilizations			
a. Rehabilitation of La Clerly Main Drain/Ravine	0.045	0.255	0.300
b. Implementation of Small Mitigation Works (gabion, rubble walls, slope protection)	0.150	0.850	1.000
(iv) Retrofitting of schools	0.039	0.219	0.258
(v) Retrofitting of health centers.	0.043	0.246	0.290
(vi) Procurement of additional stock of gabion baskets, mattresses and geotextile,	0.030	0.170	0.200
(vii) Training and capacity building for the Technical Service Division of MCWTPU	0.004	0.016	0.020
(viii) Technical audits	0.018	0.072	0.090
(ix) Design and supervision of work.	0.090	0.360	0.450
Total	0.922	5.039	5.960
Strengthening Emergency Preparedness and Response			
(i) Construction of the EOC & Central Warehouse	0.105	0.595	0.700
(ii) Additional satellite warehouses	0.041	0.230	0.270
(iii) Installation of water tanks in shelters	0.002	0.013	0.015
(iv) TA and training for NEMO			
a. Emergency Shelter Manuals - Volumes 1 & 2	0.004	0.016	0.020
b. Shelter regulation and what to bring to a shelter	0.003	0.007	0.010
c. Training in shelter management, telecommunications & supply management	0.002	0.007	0.009
d. National Emergency Response Plan	0.030	0.070	0.100
e. Production of video on how to prepare and deal with disaster events	0.009	0.021	0.030
(v) Specialized disaster equipment			
a. Strong box for pre-positioning of items	0.014	0.077	0.090
b. Additional communications equipment	0.009	0.051	0.060
c. Shelter Emergency supply	0.012	0.068	0.080
Total	0.230	1.154	1.384

Institutional Strengthening			
(i) Building code training and sensitization	0.010	0.040	0.050
(ii) Territorial Planning TA	0.013	0.052	0.065
(iii) Vulnerability assessment and Hazard mapping (including floodable area at Anse la Ray, Dennery and Soufriere, Baboneau/Boguis and others)	0.020	0.080	0.100
(vi) Study on vulnerability and risk transfer of government assets	0.040	0.160	0.200
Total	0.083	0.332	0.415
Project Management Total	0.090	0.210	0.300
Total Baseline Cost	1.325	6.734	8.060
Physical/Price Contingencies		0.806	0.806
Total Project Costs[1]	1.325	7.541	8.866
Front-end Fee		0.036	0.036
Total Financing Required	1.325	7.577	8.902

[1]Identifiable taxes and duties are US$1.29 million, and the total project cost, net of taxes, is US$7,37 million. Therefore, the share of project cost net of taxes is 85%.

Annex 6: Implementation Arrangements
SAINT LUCIA: LC Disaster Management Project II

Project Coordination and Management

The PCU, under the Ministry of Physical Development, Environment and Housing (MPDEH), will be responsible for coordinating the implementation and the financial management of the proposed project.

Financial Management

The PCU has in place an adequate budgetary and financial management system. Moreover, the PCU has experience in managing FM aspects of Bank projects through its involvement with two previous Bank projects. The PCU has a full complement of experienced staff, is well versed in Bank financial management and procurement procedures, and has performed satisfactorily in the past. In addition, the PCU has experience with report-based disbursement procedures. With full implementation of the measures in the action plan presented in Annex 7, the PCU would have in place adequate financial management arrangements that meet the Bank's minimum fiduciary requirements for the proposed project.

The flow of funds for the proposed project calls for the loan funds to be channeled to the project through a Special Account denominated in US Dollars to be established by the PCU in a commercial bank. The PCU will operate a local currency Special Account, to finance project expenditures in local currency, where Bank funds will be periodically transferred (in an amount to cover no more than 30 days of projected expenditures) and will be operated in accordance with the procedures and guidelines set forth in the Bank's Disbursement Handbook. The PCU will also operate a Project Account for the purpose of receiving counterpart funds from the Saint Lucia government and provide the counterpart funds for the payment of civil works, consultancy services, goods and other items. This account will also be maintained in a commercial bank.

To facilitate disbursement under this project, proceeds of the credit/loan would be disbursed following effectiveness to the US Dollar denominated special account managed by the PCU. The initial deposit into the special account will be US$800,000. Since the PCU has extensive experience with financial management of Bank projects and the preparation of FMRs, disbursements will be made based on FMRs to be submitted to the Bank quarterly, along with a withdrawal application.

Procurement Activities

Procurement activities will be carried out by the PCU in close coordination with the Government Tender Boards. The PCU is satisfactorily staffed by a Project Coordinator, a Deputy Project Coordinator who also acts as a Procurement Officer, an Administrative Unit of 3 staff, an Accounting Unit of 2 staff, and a Clerk. It is also contemplated to hire in due time an Engineer/Quantity surveyor to overview the design and Bill of Quantities prepared by the consultants contracted under the project and would act as a procurement assistant. The

Operational Manual will include, in addition to the procurement procedures, the Standard Bidding Documents (SBD) to be used for each procurement method, as well as model contracts for works and goods procured on the basis of three quotations or shopping.

An assessment of the capacity of the PCU to implement procurement actions for the project was carried out in January 2004. The assessment reviewed the organizational structure of the PCU and the interaction between the project's Procurement Officer and the Government's Tender Board. Based on that review the overall project risk for procurement is AVERAGE.

Annex 7: Financial Management and Disbursement Arrangements

SAINT LUCIA: LC Disaster Management Project II

Summary Conclusion of Financial Management Assessment. On the basis of the assessments performed, the financial management team presents the following conclusions:

i. The PCU has in place an adequate budgetary and financial management system. Moreover, the PCU has experience in managing FM aspects of Bank projects through its involvement with two previous Bank projects. The PCU has a full complement of experienced staff, is well versed in Bank financial management and procurement procedures, and has performed satisfactorily in the past. In addition, the PCU has experience with report-based disbursement procedures.

ii. Assuming the PCU carries out the proposed action plan presented in this assessment, it would have in place adequate financial management arrangements that meet the Bank minimum fiduciary requirements for the proposed project.

Implementing Arrangements. The PCU, under the Ministry of Physical Development, Environment and Housing (MPDEH), will be responsible for coordinating the implementation and the financial management of the proposed project. The PCU has experience managing Bank projects as it was responsible for managing the previous disaster mitigation project (ERDMP) and is still managing the Emergency Recovery Project (ERP). Through its involvement with these two projects, the PCU has acquired expertise in procurement and financial management of Bank projects.

Flow of Funds. The flow of funds calls for the Loan/Credit funds to be channeled to the project through a Special Account denominated in US Dollars to be established by the PCU in a commercial bank. The PCU will operate a local currency Special Account, to finance project expenditures in local currency, where Bank funds will be periodically transferred (in an amount to cover no more than 30 days of projected expenditures) and will be operated in accordance with the procedures and guidelines set forth in the Bank's Disbursement Handbook. The PCU will also operate a Project Account for the purpose of receiving counterpart funds from the Saint Lucia government and provide the counterpart funds for the payment of civil works, consultancy services, goods and other items. This account will also be maintained in a commercial bank.

Audit Arrangements: Under the proposed project, project financial statements would be audited annually. The audit reports would be prepared in accordance with International Standards on Auditing, by independent auditors acceptable to the Bank and in accordance with the TOR. The PCU will need to present TOR and a letter of appointment of the external auditor during negotiations for Bank review and approval. The audit report would include supporting schedules providing sufficient information on the project (i.e. Sources and Uses of Funds, Statement of Expenditures (SOE), the Special Accounts, and the Project Account pertaining to the project). The project's annual audit report will be required to be submitted to the Bank no later than 4 months following the end of the fiscal year (April-March).

Disbursement Arrangements: To facilitate disbursement under this project, proceeds of the credit/loan would be disbursed, following effectiveness, to the US Dollar denominated special account managed by the PCU. The initial deposit into the special account will be US$800,000 with an initial advance of US$350,000. Since the PCU has extensive experience with financial management of Bank projects and the preparation of FMRs, disbursements will be made based on FMRs to be submitted to the Bank quarterly, along with a withdrawal application. The FMR will include a narrative outlining the major project achievements for the quarter, the project's sources and uses of funds, a detailed analysis of expenditures by sub-component, a physical progress report, a procurement report and a procurement table. The FMRs should be submitted to the Bank no later than 45 days after the end of the reporting period.

Budgeting Process. An annual budget would be prepared by the PCU on the basis of a consolidated annual investment plans from other participating agencies.

Financial Management Action Plan

Action	Responsible Entity	Completion Date
1. Audit Arrangements		
1.1 TOR and letter of Appointment for the auditors	PCU	Effectiveness
2. Reporting		
2.1 Submit to the Bank a sample format of the FMR to be used for disbursement purposes	PCU	Effectiveness
3. PCU		
3.1 Prepare an operational manual for the proposed project and submit to the Bank for review and no objection	PCU	Effectiveness
4. Flow of Funds		
4.1 Open the Special Account in USD in a commercial bank	PCU	Disbursement
4.2 Request the initial deposit of counterpart funds in the Project Account for the first year	PCU	Disbursement

Allocation of Loan/Credit Proceeds

Expenditure Category	Amount of the Loan Allocated (US$)	Amount of the Credit Allocated (SDR)	Financing Percentage
1. Works	2,700,000	1,800,000	85
2. Goods	183,000	125,000	85
3. Consulting Services (intl.)	338,000	230,000	80
4. Consulting Services (local)	105,000	72,000	70
5. Operating Expenses	128,000	87,000	85
Front-end Fee	37,000		
Unallocated	209,000	286,000	
Total	3,700,000	2,600,000	

Special Account: US$800,000

Annex 8: Procurement

SAINT LUCIA: LC Disaster Management Project II

A. Procurement Arrangements

Procurement for the proposed project would be carried out in accordance with World Bank "*Guidelines: Procurement under IBRD loans and IDA Credits*", published in January 1995 (Revised January/August 1996, September 1997, and January 1999); and: "*Guidelines: Selection and Employment of Consultants by World Bank Borrowers*" published in January 1997 (revised in September 1999, January 1999 and Mat 2002) and the provisions stipulated in the Loan/Credit Agreement.

B. Procurement methods:

The methods to be used for the procurement described below, and the estimated amounts for each method are summarized in Table A. The threshold contract values for the use of each method are shown in Table B.

Procurement of Works

Works procured under this project would normally include the Dennery Coastal protection works, the construction of an EOC, the rehabilitation of two bridges, the rehabilitation of La Clery main drain, small mitigation works, the retrofitting of 3 schools and 3 health centers, the construction of about 10 satellite warehouses, and the installation of water tanks in the retrofitted schools, all totaling about US$6.71 million equivalent (including contingencies). Major contracts for these works estimated to cost more than US$1 million equivalent per contract, up to an aggregate amount of US$2.46, will be procured through International Competitive Bidding procedures (ICB) using Bank-issued SBD. Contracts estimated to cost less than US$1.0 million equivalent per contract may be procured using National Competitive Bidding procedures (NCB) up to an aggregate amount of US$2.33 million, using standard bidding documents agreed in advance with the Bank. Small works, estimated to cost less than US$150,000 equivalent per contract, up to an aggregate amount of US$1.91 million, may be procured on the basis of at least three quotations received from local qualified contractors in response to a written invitation, which will include a detailed description of the works, basic specifications, the required completion date, a basic form of agreement acceptable to the Bank, and relevant drawings, where applicable.

Procurement of Goods

Goods procured under this project would include stock of gabions baskets, strong boxes for positioning, communication equipment, and shelters emergency supplies totaling about US$473,000. To the extent possible, contracts for these goods will be grouped into bidding packages of more than US$150,000 equivalent, up to an aggregate amount of US$220,000, and procured following ICB procedures, using Bank-issued SBD. Contracts with estimated values below this threshold per contract and up to an aggregate amount of US$253,000 equivalent may be procured using National Competitive Bidding procedures (NCB) using standard bidding

documents (SBD) agreed with the Bank. Contracts for goods which cannot be grouped into larger packages and estimated to cost less than US$ 25,000 per contract, may be procured using shopping (National/International) procedures based on a model request for quotations satisfactory to the Bank.

Selection of Consultants

Under this project, consulting services will be contracted normally in the following areas of expertise: Risk transfer, Hazard mapping, Emergency Response plan, Emergency Shelters Manuals, Shelter regulation, Design and Supervision of civil works, and Training. These services are estimated to total about US$1.59 million equivalent and would be procured using Bank Standard Request for Proposals (RFP).

Firms

All contracts for firms would be procured using QCBS except for small and simple contracts estimated to cost less than US$100,000 that would be procured using CQ/SS, up to an aggregate amount of US$423,500 equivalent.

Contract up to a maximum amount of US$346,500 may be procured with the previous agreement of the Bank using single source selection as they represent natural continuation of previous work satisfactorily carried out under ERDMP, and as continuity for downstream work is essential (e.g. for supervision of works designed by the specialized firms).

Individuals

Specialized advisory services would be provided by individual consultants selected by comparisons of qualifications of three candidates and hired in accordance with the provisions of paragraph 5.1 through 5.4 of the Consultant Guidelines, up to an aggregate amount of US$185,900**.**

In exceptional cases, single-source contracting may be used with the previous agreement of the Bank and in accordance with the provision of paragraph 5.4 of the consultants Guidelines, up to an aggregate amount of US$110,000.

C. Operational Costs

PCU Staff salaries, sundry items, office supplies, utilities and other operational costs would be financed by the loan/credit proceeds up to a total amount of US$330,000 and will be procured under procedures acceptable to the Bank.

D. Procurement Capacity Assessment

A Procurement Capacity Assessment was prepared by the Procurement Specialist following a mission to St Lucia from January 12 to 16, 2004 and the report is in the Bank's files.

The PCU has been responsible for coordinating implementation under the previous disaster mitigation project (EDRMP) and is still coordinating the implementation of the ongoing ERP, which is assisting the Government of Saint Lucia to improve security in airports and seaports. The PCU is under the Ministry of Physical Development, Environment and Housing (MPDEH). Though the PCU was slow to begin activities under the EDRMP, it is now satisfactorily staffed and has acquired expertise in procurement and financial management. The expertise was further strengthened through the implementation of the ERP, which became effective in August 2002. The PCU will be responsible for coordinating the implementation of this proposed project, including most of the major works and buildings.

The MCWTPU will be responsible for flood control works at Dennery and much of the small mitigation works. The Ministry of Education and the Ministry of Health will contract works under their respective jurisdictions. NEMO will implement the Emergency Preparedness and Institutional Strengthening components.

The quality and quantity of the staff of the existing PCU is good and essential to positive procurement implementation and administration. This assessment determines that in general sufficient qualified staff are available to carry out the normal procurement tasks that would be assigned to them. The existing staff have relevant knowledge of the disciplines and the capacity required for carrying out the proposed procurement plan under the project. Due to the fact, however, that the PCU would be required to manage two loans at the same time, additional staff for procurement and implementation purposes is proposed in the Action Plan, that takes into consideration the specificity of the new loan.

E. Action Plan

Discussions took place with the Counterpart about any possible scenarios of a suitable action plan by loan's effectiveness and during implementation.
As a consequence, the action plan should include:

- Hiring of a full time expert [as a preference a quantity surveyor or any expert with engineering, construction and supervision of works background] to assist the PCU staff for the entire duration of the project. The expert should have also procurement expertise to support, among others, the processes of hiring individual consultants, procuring goods, procuring small works and supervision of small works;
- Preparation by the PCU of a chapter in the Operations Manual on procurement detailing all the procedures and channels of responsibilities and flow of documentation. Final to be approved by effectiveness;
- Establishment of a procurement filing system satisfactory to the Bank to be included in the Operations Manual;
- Preparation by the PCU of a detailed procurement plan for the first 18 months of implementation to be included in the Operations Manual (to be agreed upon by effectiveness);
- Preparation by the PCU of draft SBD for all processes to be presented in Annex of the Operations Manual (to be agreed upon by effectiveness).

F. Procurement Plan

During pre-appraisal, the Borrower developed a draft procurement plan for project implementation, which provided the basis for the aggregate amounts for the procurement methods (per Table A). This plan is in the project files. The final Procurement Plan will be submitted by the Borrower to the Bank's review and approval before negotiations and the beginning of each fiscal year [or earlier if required under paragraph 1 of Appendix 1 to the Bank Guidelines].

Table A: Project Costs by Procurement Arrangements
(US$ equivalent)

	Procurement Method[1]				
Expenditure Category	**ICB**	**NCB**	**Other[2]**	**N.B.F[3]**	**Total Cost**
1. Works	2.46	2.33	2.02		6.80
	2.09	1.98	1.71		5.78
2. Goods	0.22	0.25			0.47
	0.19	0.22			0.40
3. Services			1.26		1.26
			1.26		1.26
4. Operating Expenses			0.33		0.33
			0.28		0.28
Total	2.68	2.58	3.60		8.87
Bank Financed	2.28	2.19	3.25		7.72
Local Funding	0.40	0.39	0.35		1.14

[1]Figures in bold are the amounts to be financed by the Loan/Credit. All costs include contingencies.
[2]Includes civil works and goods to be procured through national shopping, consulting services, services of contracted staff of the project management office, training, technical assistance services, and incremental operating costs related to (i) managing the project, and (ii) re-lending project funds to local government units.
[3]Not Bank Financed.

Table A1: Consultant Selection Arrangements
(US$ equivalent)

Consultant Services	Selection Method				
Expenditure Category	**QCBS**	**CQ**	**Other**	**N.B.F**	**Total Cost**
A. Firms	0.55	0.52			1.07
	0.44	0.39			0.83
B. Individuals			0.19		0.19
			0.14		0.19
Total	0.55	0.52	0.19		1.26
Bank Financed	0.44	0.39	0.14		0.97
Local Funding	0.11	0.13	0.04		0.28

Table B: Thresholds for Procurement Methods and Prior Review[1]

Expenditure Category	Contract Value Threshold (US$)	Procurement Method	Contracts Subject to Prior Review
1. Works	> 1,000,000	ICB	All
	< 1,000,000	NCB	>$300,000 All <$300,000 None
	< 150,000	3 Quotations	First
2. Goods	> 150,000	ICB	All
	>25,000	NCB	First 2
	< 25,000	Shopping	None
3. Consulting Services	> 100,000 Firms	QCBS	All
	< 100,000	CQ/SS	TORs only
	> 50,000	Guidelines V	All
	< 50,000 IC	Guidelines V	TORs only

Total Value of Contracts subject to prior review: $5,608,000 (71%)

Total Number of Contracts subject to prior review: 19 over 103

G. Frequency of procurement supervision

In addition to the prior review supervision to be carried out from Bank offices, the capacity assessment of the PCU has recommended one full supervision mission every year to carry out post-review of procurement actions. Based on the overall risk assessment (AVERAGE) the post-review field analysis should cover a sample of not less than 1 in 10 contracts signed.

Annex 9: Economic and Financial Analysis

SAINT LUCIA: LC Disaster Management Project II

1. Economic Analysis

Overview

The economy of Saint Lucia is estimated to have grown by 0.5% in real terms during 2002, after declining by 5.2% in 2001. Prior to 2001, the economy had experienced more than a decade of uninterrupted growth averaging 2.2%. The recent decline is attributed to the reduction in the tourism industry due to the terrorist attacks on the United States on September 11, 2001. This event, coupled with the fact that the recent changes in the EU import preference regime and the increased competition from Latin American bananas, has made economic diversification an increasingly important consideration for Saint Lucia. The island nation has been able to attract foreign business and investment, especially in its offshore banking and tourism industries.

The real value added of the hotel and restaurant sub-sectors, a major aspect of the tourism sector, is estimated to have increased by 1.3% in 2002. The contribution of the industry to real GDP was 12.2% in 2002, and was the leading activity in the traded sector. Arrivals of stay-over guests continue to increase, as Saint Lucia sees results from increased promotion of the destination. Saint Lucia also has a substantial number of short term/excursionist arrivals from the cruise ships arriving in Castries. The average number of cruise ship arrivals for the period 1999 to 2002 is over 466,000 per annum.

In terms of tourism activities, Dennery lies at a crucial point on the island. Dennery is midway between the international airport at Vieux Fort and the resort area just north of Castries~ Passengers for the over 10,000 international flights that arrive at the Hewanorra Airport in Vieux Fort have to pass through Dennery to arrive at their accommodation. In terms of cruise ship excursionists, many of the tours, which center around “Heritage Tourism” (a combination of eco-tourism and cultural tourism), for example the Frigate Bay Nature Reserve, take place in the south of the country. Dennery is a logical short stop for these excursionists for refreshment and fresh air.

The village already capitalizes on the location during its Saturday Night Fish Fiesta, where patrons may on average spend between EC$50 and EC$80 per person. Since the project is intended to protect and enhance the beachfront lands, it is anticipated that along the beach site there will be resulting additional recreational and commercial opportunities.

The preservation of the main road through the village is also crucial, as it serves as a main link for commercial and tourism trade between the village and the international airport, as well as the nation’s capital. It is vital that the road link remains intact, as facilitated by the project. A disruption of road communications would have material effect on commercial and social activities for the village.

Cost Benefit Analysis

A complete economic cost benefit analysis was conducted to determine the economic viability of the Dennery component, as it is the most significant component to be financed by the project, representing approximately 50% of all physical works to be constructed. The analysis presented in this Annex demonstrates the overall viability of this component. Apart from the detailed economic cost benefit analysis carried out for the Dennery village coastal protection works, no economic analysis was warranted for the other physical civil works components of the project due to their relative small individual amounts of investment required for their implementation, generally less than US$500,000.

To determine the net incremental costs and benefits, "with" and "without" project scenarios were constructed. On the basis of these scenarios, the net incremental financial benefits and costs of the proposed investment were assessed, which were then adjusted for the impact of taxes, subsidies, and externalities to arrive at the economic flow of costs and benefits. The cash flows were discounted using a discount rate of 12 percent, which is estimated to be a proxy of Saint Lucia's opportunity cost of capital. The following sections provide more detailed information on the estimation of economic benefits and costs.

Technical project design included a detailed least cost analysis for each of the different subcomponents that are part of the proposed works, and detailed analysis of the works needed to protect Dennery village. Final project design includes two packages of works divided in two phases. Specifically, in Phase I, the protection of the "front line" residents and infrastructure along High Street was mandated as being a priority. This is achieved through the design of a buried revetment. The works to be carried out under Phase I include:

- Construction of a 415m long buried revetment, with crest level at +2.0 m to guard against storm surge, starting from the Dennery River in the south and going as far north as approximately opposite St. Peter's Church.
- River training works along the Dennery River from the bridge with the highway, eastwards to the mouth of the river. The primary intention of these works is to increase the height of the north river bank, thereby reducing flooding potential for the people of the village.
- Canal training works for the Trou a L'Eau Ravine at the north end of the village. These works are intended primarily to increase the carrying capacity of this drain, thereby reducing the potential for flooding at this north end of the village.
- An ongoing component of this phase will be the clearing of the mouth of the Dennery River (approximately 500 m^3), and the placement of that sand on the beach in front of the revetment, in the south-central part of the beach.

In Phase II, three offshore breakwaters are to be constructed. These are intended to provide protection to the shoreline in their lee through the reduction of wave action. The structures are not, however, intended to shut off all wave action and consequently, sediment movement. In addition, these breakwaters are intended to mitigate somewhat, the effect that the Daito has had in reducing the southerly transport of sand along the beach, through the lessening of the gradient for sand transport along the entire beach. The works to be carried out under Phase II include:

- Construction of three (3) offshore breakwaters, each 50m, 50m and 60m respectively, going from the south to the north.
- Construction of an armored berm, at the north end of the bay, and immediately north of the Daito.
- Filling behind the berm, to create a landfill area at an elevation of +1.5m.
- Extension of the ravine south drain wall, east of the road bridge, by 54m.
- Raising the north wall of the ravine, east of the road bridge, for a distance of 50m.
- Construction of a revetment along the north boundary of the village, for a linear distance of 50m. This revetment will be built with a crest elevation of +2m to protect against storm surge.

Benefits

The primary objectives of the proposed investment are the preservation of beachfront property, the mitigation of beach erosion at the project site, the protection of the existing costal road at Dennery, the reduction of flooding problems for the community and the provision of economic opportunities for the community that may help in poverty alleviation. The project is intended to provide a number of benefits to the economy, which will span social, cultural, economic and commercial activities. In addition, the project will ensure the free movement of people and goods between the village and the North and South of the country, especially of tourists, the main contributor to GDP.

For this analysis, the main quantifiable benefits were considered to be as follows:

- Avoidable road reconstruction costs assuming a substantial storm event every ten years that could result in storm surge flooding and road damage;
- Loss in commercial revenue from consumption of food and services along the project site if there were no beach area and there was a diversion away from the coastline of the village.

Other benefits, such as the cost of relocating residents in the event of a storm, the opportunity cost of the increased vehicle operating costs if there was a diversion, the aesthetic and recreational benefits, or the cost of reconstructing damage to the Daito facility were conservatively not considered.

Social surveys conducted in the Dennery area indicated that the residents would welcome increased opportunities for employment within the area. Based on the substantial contribution that the hotel and restaurant sector makes to GDP, it is foreseen that the opportunity exists for the current food services provided to be expanded over the project period. One possible area for expansion of services could, for example, be a restaurant on Dennery Island, with a ferry service to it. A number of other opportunities exist.

Road Reconstruction

It is assumed that a storm event that will substantially damage the road will occur approximately once every ten years. The average road reconstruction cost is ECD1.5 million per kilometer

(2003 constant prices). The potential road frontage that could be damaged is estimated to be 500 meters. It is also assumed that the capital works will also reduce road maintenance resulting from flooding due to the river action and to sea surges, which may substantially damage sections of road every other year.

Tourism Revenue

The village already capitalizes on the location during its Saturday Night Fish Fiesta, where patrons may on average spend between ECD50 and ECD80 per person. Since the project is intended to protect and enhance the beachfront lands, it is anticipated that along the beach site there will be resulting additional recreational and commercial opportunities.
The projection of the benefit streams derived from the sale of food in Dennery is based on an economic model assuming:

- That 12% of persons on the way to the airport stop for a light snack or drink only, spending ECD$12 per person, and only stopping one way;
- That 15% of the cruise ship passengers are excursionists traveling south, and of these, 30% stop for a snack or lunch, spending ECD$15 each;
- That the existing Saturday Night Fish Fiesta serves 62 meals per week, at ECD$40, growing to a maximum carrying capacity of 250 meals per week by 2007 due to the upgrading of facilities and marketing, and then growing at a real rate of 1% per annum thereafter.
- That the value added or profit margin is 40% of the revenue gained, based on the low import content of the meals served. Saint Lucia has its own rum distillery, brewery, and drink bottling company, and would be serving mostly local fish dishes.

Costs

The financial project investment and operation and maintenance costs were converted to economic prices, adjusting for distortions such as taxes and subsidies. Detailed information about the calculation of the conversion factors used in the analysis is available in the consultant's report in the project files.

Results of the Analysis

The analysis yielded an economic rate of return of 23%, and an economic net present value of ECD$ 3.85 million benefiting to the economy of Saint Lucia, based on a hurdle rate of 12% representing the opportunity cost of capital. The assumptions underlying the ERR calculations are listed below:

1. The analysis is based on 2003 constant prices.
2. The analysis period is 25 years.
3. Without the project, the costal road remains vulnerable and will be undermined once a major storm occurs (approximately every 10 years). The net cost of reconstruction is EC$1.5 million per kilometer and 500 meters of the road runs along the beachfront.
4. The financial cost of implementing the Project has been converted to equivalent economic cost by the application of standard conversion factors.

5. The reconstruction cost of the road is net of annual repairs and maintenance.
6. Tourism losses avoided are assumed to be amounts that are normally spent by tourists visiting Dennery and other communes.
7. The residual value of the project is 40% of the capital costs.
8. The general and preliminary items have been capitalized.
9. The tourism figures are projected using historical data on aircraft arrivals and cruise ship passengers.
10. Tourism losses avoided are calculated based on the following assumptions:
    - That 12% of persons on the way to the airport stop for a light snack or drink only, spending EC$l2 per person, and only stopping one way
    - That 15% of the cruise ship passengers are excursionists traveling South, and of these, 30% stop for a snack or lunch, spending EC$l5
    - That the existing Saturday Night Fish Fiesta serves 62 meals per week, at EC$4O, growing to a maximum carrying capacity of 250 meals per week by 2007 due to the upgrading of facilities and marketing, and then growing at a real rate of 1% per annum thereafter.
    - That the value added or profit margin is 40% of the revenue gained, based on the low import content of the meals served. Saint Lucia has its own rum distillery, brewery, drink bottling company, and would be serving mostly local fish dishes

2. Financial

This analysis is not applicable, since it is a not-revenue generating project.

Annex 10: Safeguard Policy Issues

SAINT LUCIA: LC Disaster Management Project II

Integrated Safeguards Data Sheet

I.A.1. Project Statistics

Country:	Saint Lucia
Project ID:	P086469
Project:	Saint Lucia - Disaster Management II
Task Team Leader:	Francis Ghesquiere

I.A.2. Project Objectives:

The project aims at further reducing the country's vulnerability to adverse natural events (hurricane, floods, etc.) through investment in risk management activities. As such, the objectives of the project are to further strengthen (a) infrastructure against the impact of adverse to natural events (hurricanes, flooding, etc.) through the implementation of physical mitigation measures; (b) the response capacity in case of adverse natural event (hurricane, flooding, etc) through capacity building, equipment purchase and investment in emergency infrastructure; and (c) the institutional capacity of the various ministries and agencies dealing with disaster management through the provision of adequate facilities, critical equipment, technical assistance and training.

I.A.3. Project Description:

Component 1: Physical Prevention and Mitigation Works - (a) Coastal protection works for Dennery Village. The village of 5,000 inhabitants is located on the east coast and is vulnerable to floods; (b) rehabilitation and reconstruction of two vulnerable bridges; (c) drainage, river walls and slope stabilization including rehabilitation of the La Clery Main Drain/Ravine and implementation of small mitigation works, with gabion rubble walls and slope protection; (d) retrofitting of three schools and providing them with emergency equipment, sanitary facilities and improved drainage; (e) retrofitting of health centers to ensure that they can assist communities during disasters; (f) procurement of additional stock of gabion baskets, mattresses and geotextile for use in this project and in the future; and (g) training and capacity building for the Technical Service Division of the Ministry of Communications, Works, Transport and Public Utilities (MCWTPU) which is responsible for implementing and maintaining physical prevention and mitigation works.

Component 2: Strengthening Emergency Preparedness and Response - (a) Construction of the Emergency Operation Center (EOC) and Central Warehouse for emergency equipment and supplies; (b) construction of additional satellite warehouses throughout the country to store emergency equipment and supplies; (c) installation of water tanks in shelters; (d) technical assistance and training for the National Emergency Management Office (NEMO), including emergency shelter manuals, shelter regulations, training in shelter management, telecommunication & supply management and preparation of a National Emergency Response Plan and production of video on preparation for disasters; and (e) specialized disaster equipment: (i) strong box for pre-positioning items; (ii) shelter emergency supplies; and (iii) additional communications equipment.

Component 3: Institutional Strengthening - (a) Building code training and sensitization; (b) technical assistance and training in territorial planning; (c) vulnerability assessment and hazard mapping; and (d) studies of vulnerability and risk transfer of government assets.

Component 4: Project Management - (a) Technical assistance to the Project Coordination Unit and office equipment and project management services; and (b) technical audits.

I.A.4. Project Location: The project will be carried out throughout the island of Saint Lucia; site selection for small works have been based on the following criteria:
(i) Specific risk exposure to natural disasters (flood, wind damage, land slips, etc);
(ii) Strategic importance of infrastructure at risk; and
(iii) Probable Community participation in the works

Environmental Classification: **B** (Partial Assessment)

Comments: The proposed project will finance vulnerability reduction works and some institutional strengthening. Overall it is expected that it will have a beneficial impact on the environment. One safeguard has been triggered as a result of the Flood Protection Works at Dennery Village. These works were of sufficient magnitude to be classified as category "B" for the purpose of OP 4.01 Environmental Assessment. The remaining works planned under the program are considered category C. No other policies have been triggered.

As the program of works develops, an additional screening procedure has been developed for use by the PCU to assure that future works proposed do not trigger environmental safeguards. If this should occur, the PCU will reject the proposal or require compliance with Bank and Saint Lucian environmental policy. Given the nature of the works contemplated, this is an unlikely scenario.

Policy Triggered:

Environmental Assessment (OP 4.01, BP 4.01, GP 4.01)
(*) Yes
( ) No
( ) TBD

Natural Habitats (OP 4.04, BP 4.04, GP 4.04)
( ) Yes
(*) No
( ) TBD

Forestry (OP 4.36, GP 4.36)
( ) Yes
(*) No
( ) TBD

Pest Management (OP 4.09)
( ) Yes
(*) No
( ) TBD

Cultural Property (OPN 11.03)
(*) Yes
( ) No
( ) TBD

Indigenous Peoples (OD 4.20)
( ) Yes
(*) No
( ) TBD

Involuntary Resettlement (OP/BP 4.12)
( ) Yes
(*) No
( ) TBD

Safety of Dams (OP 4.37, BP 4.37)
( ) Yes
(*) No
( ) TBD

Projects in International Waters (OP 7.50, BP 7.50, GP 7.50)
( ) Yes
(*) No

( ) TBD

Projects in Disputed Areas (OP 7.60, BP 7.60, GP7.60)*
( ) Yes
(*) No
( ) TBD

Section II - Key Safeguard Issues and Their Management

II.D.1a. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts.

OP.4.01 Environmental Assessment (EA):

The project will finance the construction of flood protection works in the village of Dennery on the Atlantic coast of the Island. These works consist of the construction of (i) a 400 meter long buried stone revetment that will enhance the shoreline and protect the residences located along the beach; (ii) three break waters of approximately 70 meters long each designed to reduce erosion and scouring actions, and improve sand replenishment along the shoreline; (iii) reclamation of about 2000 sq. m of land at the Northern side of the site, including 75 meter long stone beam to protect the reclaimed land from sea surge; (iv) appropriate bank revetment along critical segments of two rivers delaminating the Southern and Northern part of the village; and (v) works aimed at enhancing the drainage system in and around the village. The proposed program of works was designed after extensive community consultation and an Environment Impact Assessment. After review of the engineering design documentation, and environmental analysis, no significant negative impacts were identified which could not be mitigated. Generally the socio-economic impacts are wholly positive resulting in improved coastal protection and reduction in economic loss. These works also serve to partially mitigate the negative effects of coastal erosion resulting from the construction of the Dennery harbor and fish processing center in 1992. This contributed to a change in bay hydraulics adversely affecting the natural replenishment of sand along the bay margins. Bank stabilization works along the Dennery river are largely to repair existing structures and rehabilitate the existing bank system. Improved drainage will reduce negative health impacts resulting from standing water improving mosquito control reducing the need for pesticide controls.

The project will also finance the construction of an Emergency Operation Center (EOC), the retrofitting of schools and health centers, and the continuation of a program of small mitigation works; including the construction or repair of retention walls, river wall protections, drains, and the retrofitting of public buildings and three bridges.

II.D.1b. Describe any potential cumulative impacts due to application of more than one safeguard policy or due to multiple project component.

N/A

II.D.1c. Describe any potential long term impacts due to anticipated future activities in the project area.

In the case of the Dennery coastal defenses, impacts are expected to reduce catastrophic property loss from severe storm damage, reduce coastal erosion and reduce the pressure for relocation along the margins of the adjacent river watersheds. The limited beach reclamation will restore the communities principal recreation area generally improving local quality of life. Impacts are limited to the Dennery Bay area with no impacts identified affecting areas beyond the Dennery community. This is due to the fact that the bay is a wholly closed hydraulic system.

II.D.2. In light of 1, describe the proposed treatment of alternatives (if required)

Flood Protection Work at Dennery: Five scenarios were analyzed to evaluate how best to protect the area. These are:

Option 1: Do Nothing
Option 2: Sand Management
Option 3: Buried Revetment/Sand Management/River Ban Protection
Option 4: Same as 3 with one Breakwater
Option 5: Same as 3 with two Breakwaters

Option six was created from the options presented after extensive consultation with the Dennery community and concurrence with environmental and engineering review.

Option 6: Same as 5 with Limited Land Reclamation and Improved Drainage

II.D.3. Describe arrangement for the borrower to address safeguard issues:

Dennery Village Flood Protection Works: An Environmental Impact Assessment (EIA) has been prepared; including a social assessment and stakeholders' workshop has been conducted. The proposed program of works has been developing in consultation with the Dennery community, so as to minimize environmental degradation and avoid resettlement. The environmental impact assessment shows that there is strong demand for the project from the Dennery residents who are at risk of experiencing damage to their businesses, homes and properties in case of sea swells, storm waves and floods. According to the study, many of the residents place a high social value on living in their present location, which would be protected if the project were implemented.

Small Mitigation Works: Project preparation included an Environmental Assessment to identify key elements that must be evaluated and considered during project location and design. These guidelines and screening process for small mitigation works will be capable of detecting possible impacts on archaeological or historical sites and ensuring compliance with OPN 11.03. The EA report to be included in the Operations Manual consists of:

a. A PCU project implementation procedure for environmental management of small works activities. This requires special attention based on the Bank's environmental and social

safeguard policies and integrates requirements recent promulgated under Saint Lucian law.

b. Environmental guidelines and screening process describing procedures to be followed to comply with the Bank's safeguard policies; these guidelines result in the incorporation of contract clauses to be included in contracts issued under the program of small mitigation works. This process applies to small works activities such as construction or repair of retention walls, river wall protections, drains, and the retrofitting of public buildings and three bridges.

Capacity Building: Through experience acquired in the implementation of past and on-going operations, the PCU is aware of the Bank's policy on environmental impact. The project also includes strengthening of the capacity of the MCWTPU to address disaster risk in its infrastructure program, and in particular ways to prevent or address environment degradation.

II.D.4. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

Dennery Village Flood Protection Works: The primary beneficiaries will be the low income Dennery community, local authorities, and local civil society that have been closely involved in the development of the proposed mitigation measures. Extensive public consultations were held with the community which resulted in the development of the engineering approach that was chosen.

Additional Small Mitigation Works have generally been identified at the request of local communities. In many cases, works will be implemented with strong community participation and will result in the strengthening or hardening of existing works against severe storm events. If the screening procedure reveals that a safeguard might be triggered, the project is either rejected or the review requirements under Bank policy and Saint Lucian law will be triggered under PCU implementation procedures. These require public consultation with affected groups. As these projects relate to evacuation centers, protection of transportation corridors and mitigation of flood impacts, the stakeholders include all levels of society with particular benefit realized by economically disadvantaged segments unable to provide for their own proper protection.

E. Safeguards Classification:

[ ] S1. ? Significant, cumulative and/or irreversible impacts; or significant technical and institutional risks in management of one or more safeguard areas
[X] S2. ? One or more safeguard policies are triggered, but effects are limited in their impact and are technically and institutionally manageable
[ ] S3. ? No safeguard issues
[ ] SF. ? Financial intermediary projects, social development funds, community driven development or similar projects which require a safeguard

framework or programmatic approach to address safeguard issues.

Environmental Assessment/Analysis/Management Plan:		
Expected:	November 15, 2003	Actual: February 29, 2004
Date of receipt by the Bank		February 25, 2004
Date of "in-country" disclosure		December 5, 2003
Date of submission to InfoShop		February 26, 2003
Date of distributing the Exec. Summary of the EA to the Executive Directors (For category A projects)		N/A
Resettlement Action Plan/Framework:		N/A
Indigenous Peoples Development Plan/Framework:		N/A
Pest Management Plan:		N/A
Dam Safety Management Plan:		N/A

If in-country disclosure of any of the above documents is not expected, please explain why.

Signed and submitted by
Task Team Leader: Francis Ghesquiere, Urban Specialist

Project Safeguards
Specialists 1: Juan Quintero, Lead Environment Specialist, LCSEN

Project Safeguards
Specialists 2: Gerald Meier, Environment Consultant

Project Safeguards
Specialists 3:

Annex 11: Project Preparation and Supervision

SAINT LUCIA: LC Disaster Management Project II

	Planned	Actual
PCN review	10/24/2003	10/28/2003
Initial PID to PIC		11/03/2003
Initial ISDS to PIC		11/06/2003
Appraisal	03/26/2004	
Negotiations	04/26/2004	
Board/RVP approval	06/22/2004	
Planned date of effectiveness	08/01/2004	
Planned date of mid-term review	09/15/2006	
Planned closing date	06/30/2009	

Key institutions responsible for preparation of the project:

National Emergency Management Office
Ministry of Physical Development, Environment and Housing
Ministry of Education, Human Resources Development, Youth and Sports
Ministry of Health, Human Services, Family Affairs and Gender Relations
Ministry of Communications, Works Transport and Public Utilities
Ministry of Finance and Economic Affairs

Bank staff and consultants who worked on the project included:

Name	Title	Unit
Francis Ghesquiere	Urban Specialist	LCSFU
Maryse Gautier	Sr. Urban Specialist	LCSFU
Gérard Liautaud	Civil Engineer	Consultant
Gerry Meyer	Environment Specialist	Consultant
Maria Angélica Sotomayor	Economist	LCSFW
Juan Quintero	Lead Environment Specialist	LCSEN

Bank funds expended to date on project preparation:

1. Bank resources: US$50,000
2. Trust funds: US$ 0
3. Total: US$50,000

Estimated Approval and Supervision costs:

1. Remaining costs to approval: US$75,000
2. Estimated annual supervision cost: US$95,000

Annex 12: Documents in the Project File

SAINT LUCIA: LC Disaster Management Project II

1. Project Proposal, Government of Saint Lucia, September 2003.
2. Review of Environmental Impact Assessment in Selected Countries in Latin America and the Caribbean, Methodology, Results and Trends, Inter-American Development Bank (IADB), Center for Development Studies, 2001.
3. Natural Hazard Risk Management in the Caribbean: Revisiting the Challenge, The World Bank, June 2002.
4. Draft National Disaster Plan, National Emergency Management Office (NEMO), December 2003.
5. Environment Guidelines for Small Works (Report of the Environment Specialist), February 2004.
6. Environment Impact Assessment for the proposed Coastal protection Works at Dennery Village, Smith Warner International, February 2004.
7. Final Design Report for Dennery Flood Protection Works, Smith Warner International, October 2003.
8. Assessment of the Risk transfer Component by Robert Muir-Wood, Risk Management Solutions, Inc. (RMS), February 2004.

Annex 13: Statement of Loans and Credits

SAINT LUCIA: LC Disaster Management Project II

			Original Amount in US$ Millions						Difference between expected and actual disbursements	
Project ID	FY	Purpose	IBRD	IDA	SF	GEF	Cancel.	Undisb.	Orig.	Frm. Rev'd
P077712	2002	6O LC Education (APL01)	6.00	6.00	0.00	0.00	0.00	12.64	3.66	0.00
P070244	2002	LC Water Sector Reform Tech Assist	1.30	1.30	0.00	0.00	0.00	2.27	0.96	0.00
P077687	2002	Saint Lucia Emergency Recovery Project	1.89	4.41	0.00	0.00	0.00	3.15	0.25	0.00
P054939	2000	LC- POVERTY REDUCTION FUND	1.50	1.50	0.00	0.00	0.00	0.44	0.36	0.00
		Total:	10.69	13.21	0.00	0.00	0.00	18.50	5.23	- 0.04

SAINT LUCIA
STATEMENT OF IFC's
Held and Disbursed Portfolio
In Millions of US Dollars

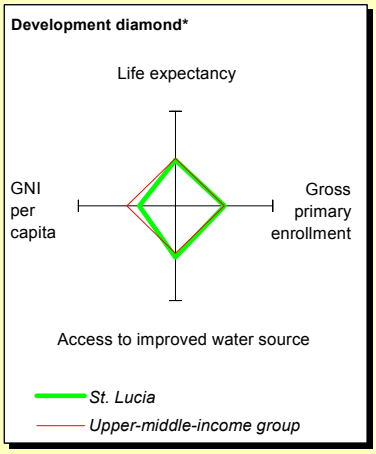
		Committed				Disbursed			
		IFC				IFC			
FY Approval	Company	Loan	Equity	Quasi	Partic.	Loan	Equity	Quasi	Partic.
	Total portfolio:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		Approvals Pending Commitment			
FY Approval	Company	Loan	Equity	Quasi	Partic.
	Total pending commitment:	0.00	0.00	0.00	0.00

Annex 14: Country at a Glance

SAINT LUCIA: LC Disaster Management Project II

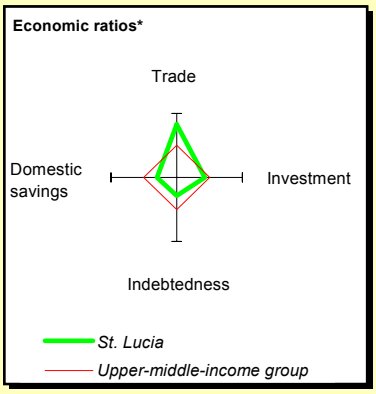
POVERTY and SOCIAL	St. Lucia	Latin America & Carib.	Upper-middle-income
2002			
Population, mid-year *(millions)*	0.16	527	331
GNI per capita *(Atlas method, US$)*	3,750	3,280	5,040
GNI *(Atlas method, US$ billions)*	0.60	1,727	1,668
Average annual growth, 1996-02			
Population *(%)*	1.4	1.5	1.2
Labor force *(%)*	..	2.2	1.8
Most recent estimate (latest year available, 1996-02)			
Poverty *(% of population below national poverty line)*	..	..	..
Urban population *(% of total population)*	38	76	75
Life expectancy at birth *(years)*	71	71	73
Infant mortality *(per 1,000 live births)*	13	27	19
Child malnutrition *(% of children under 5)*	..	9	..
Access to an improved water source *(% of population)*	98	86	90
Illiteracy *(% of population age 15+)*	..	11	7
Gross primary enrollment *(% of school-age population)*	106	130	105
Male	105	131	106
Female	108	128	105



KEY ECONOMIC RATIOS and LONG-TERM TRENDS

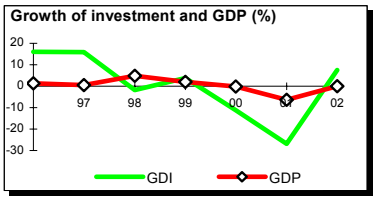
	1982	1992	2001	2002
GDP *(US$ billions)*	0.14	0.48	0.65	0.66
Gross domestic investment/GDP	33.5	24.1	16.1	17.0
Exports of goods and services/GDP	57.8	67.7	55.2	54.8
Gross domestic savings/GDP	7.4	15.3	14.5	13.1
Gross national savings/GDP	16.0	12.2	10.3	8.6
Current account balance/GDP	-25.4	-11.8	-5.8	-8.4
Interest payments/GDP	0.4	0.9	1.4	1.3
Total debt/GDP	11.9	20.5	36.4	62.8
Total debt service/exports	1.4	3.3	6.6	25.3
Present value of debt/GDP	..	..	35.4	..
Present value of debt/exports	..	..	59.7	..

	1982-92	1992-02	2001	2002	2002-06
(average annual growth)					
GDP	9.2	1.2	-6.3	0.0	..
GDP per capita	7.6	-0.3	-7.6	-1.2	..
Exports of goods and services	12.0	-1.0	-11.3	1.2	..

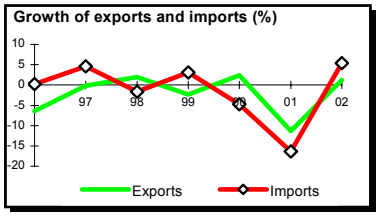


STRUCTURE of the ECONOMY

	1982	1992	2001	2002
(% of GDP)				
Agriculture	13.9	13.4	6.3	6.7
Industry	20.8	20.0	18.8	18.8
Manufacturing	9.1	7.5	4.9	5.0
Services	65.3	66.7	74.8	74.5
Private consumption	68.5	70.2	68.6	70.5
General government consumption	24.0	14.6	16.9	16.5
Imports of goods and services	83.8	76.5	56.8	58.7



	1982-92	1992-02	2001	2002
(average annual growth)				
Agriculture	6.4	-6.6	-24.4	7.2
Industry	10.2	1.5	-3.7	-0.6
Manufacturing	9.6	-0.8	-4.9	1.2
Services	7.1	2.3	-3.7	-1.1
Private consumption	9.9	1.5	-6.0	4.6
General government consumption	4.2	2.4	4.9	0.7
Gross domestic investment	9.9	-1.8	-26.9	7.6
Imports of goods and services	11.1	-1.2	-16.4	5.3

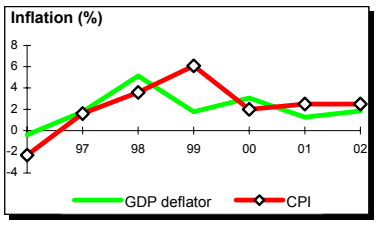


Note: 2002 data are preliminary estimates.

* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

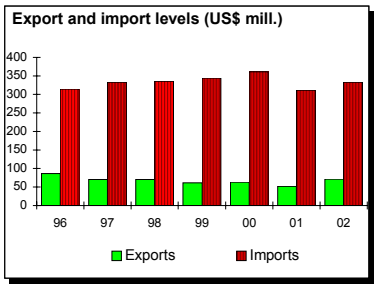
PRICES and GOVERNMENT FINANCE

	1982	1992	2001	2002
Domestic prices				
(% change)				
Consumer prices	4.6	5.6	2.5	2.5
Implicit GDP deflator	5.8	3.5	1.3	1.8
Government finance				
(% of GDP, includes current grants)				
Current revenue	..	25.5	25.3	23.3
Current budget balance	..	6.8	2.6	-0.3
Overall surplus/deficit	..	-1.4	-4.6	-8.3



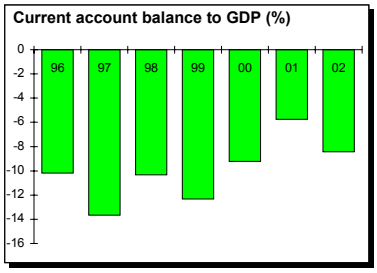
TRADE

	1982	1992	2001	2002
(US$ millions)				
Total exports (fob)	42	129	52	71
Bananas	16	68	15	17
Fruits and vegetables	0	1	1	1
Manufactures	15	31	11	26
Total imports (cif)	118	308	311	333
Food	25	59	65	69
Fuel and energy	14	16	15	16
Capital goods	20	66	61	65
Export price index *(1995=100)*	..	110	95	94
Import price index *(1995=100)*	..	94	84	..
Terms of trade *(1995=100)*	..	116	113	..



BALANCE of PAYMENTS

	1982	1992	2001	2002
(US$ millions)				
Exports of goods and services	86	324	357	361
Imports of goods and services	135	366	368	387
Resource balance	-49	-42	-10	-26
Net income	-1	-30	-41	-43
Net current transfers	14	16	14	13
Current account balance	-37	-56	-37	-56
Financing items (net)	39	60	47	48
Changes in net reserves	-2	-3	-10	7
Memo:				
Reserves including gold *(US$ millions)*	8	54	87	80
Conversion rate *(DEC, local/US$)*	2.7	2.7	2.7	2.7



EXTERNAL DEBT and RESOURCE FLOWS

	1982	1992	2001	2002
(US$ millions)				
Total debt outstanding and disbursed	17	98	236	414
IBRD	0	0	5	5
IDA	0	4	12	20
Total debt service	1	12	25	98
IBRD	0	0	1	1
IDA	0	0	0	0
Composition of net resource flows				
Official grants	4	5	18	0
Official creditors	2	22	-5	10
Private creditors	0	-1	7	30
Foreign direct investment	27	41	51	0
Portfolio equity	0	0	0	0
World Bank program				
Commitments	0	0	0	12
Disbursements	0	4	1	8
Principal repayments	0	0	1	1
Net flows	0	4	0	7
Interest payments	0	0	0	0
Net transfers	0	4	0	7