

Figure 8. Map of Grenada showing damage to environmental assets

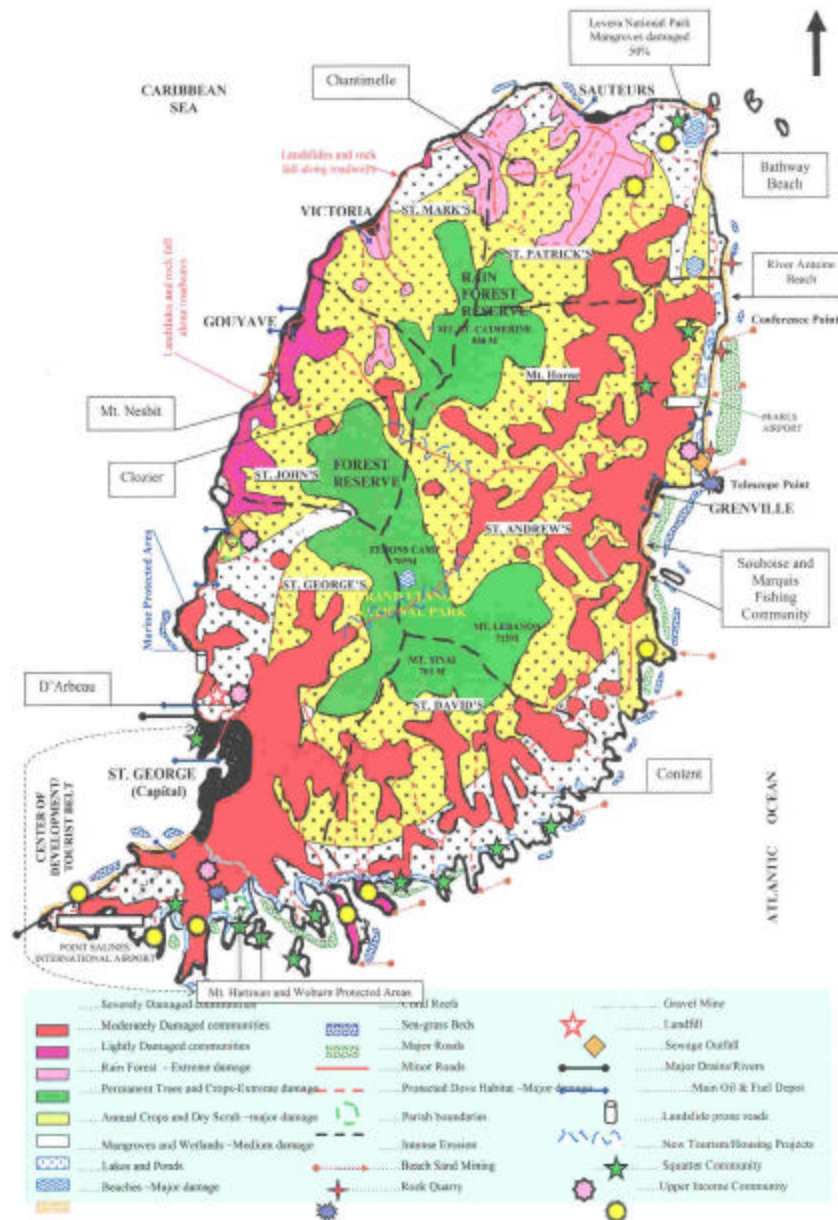


Figure 2 Map of Grenada showing Hurricane Ivan Damage to Environmental Assets

4.2 Description of Environmental Impacts

Environmental Asset	Intensity of Damage	Extent of Damage	Functioning of Asset	Duration of Impact	Recovery of Asset
Mangroves	Medium	70%	Adverse Effect	Short to Medium term	Natural/ requires appropriate environmental protection measures
Sea grass beds	Minor	<10%	No Effect	Short term	Natural
Coral reefs	Minor	<10%	No Effect	Short term	Natural
Beaches	Major	>50% ^a		Short to Medium term	Natural
Forest and natural vegetation	Extreme	100%	Intense impairment of the functioning of the asset	Long term	Irreversible damage. Requires concentrated environmental protection measures.
Wildlife	Extreme	100%	Impairment of the functioning of the asset	Medium to Long term	Requires concentrated environmental protection measures
Fisheries ^a	Minor	<10%	No effect	Potential Medium to long term impact*	Natural

Table 34 Incremental Damage Intensity Rating of Environmental Assets⁴⁰

^a La Sagesse, River Antoine, Bathway, Pearls

^b The immediate impact of the hurricane has been minor but there may be a potential medium to long-term impact on the fish stock, particularly near shore and reef fisheries which are dependent on other neighbouring ecosystem such as mangroves and watersheds. Fresh water fisheries will also be impacted seriously in the medium term because of a change in water quality and quantity, resulting in a disturbance in the habitat. The impact on the sector is mainly due to damaged boats and equipment.



Photo 16 Damage to Watersheds and Forests

⁴⁰ Source OECS ground truthing

List of Livelihoods	Intensity	Comments
Hunting	Extreme	The wildlife habitats and source of food have been destroyed
Tour-guiding	Extreme	Access routes to the eco-tourism sites are impassable; it is envisaged that the sites have also sustained some damage
Craft-making	Major	Although the bamboo and screw pine have sustained damaged, material can still be obtained from the damaged stock; unfortunately, preservation and storage of the material may prove problematic
Fruit gatherers	Extreme	All the trees and plants have been severely damaged
Charcoal burners		This has a positive impact because of the abundance of wood from the fallen trees

Table 35 Damage to Livelihoods Generated from Ecological Assets⁴¹

Environmental Assets (Key)	St. George's	St. John's	St. Mark's	St. Patrick's	St. Andrew's	St. David's
Beaches	Minor	Minor	Minor	Major		
Coral reef	Minor	NA	NA	Minor		
Grand Etang Rain Forest	Extreme	Extreme			Extreme	Extreme
Mid-elevation wet forests	Extreme	Extreme	Extreme	Extreme	Extreme	Extreme
Dry scrub forest	Major	-	-	-	-	Major
Watersheds	Extreme	Extreme	Extreme	Extreme	Extreme	Extreme
Waterfalls	Minor	Minor			Minor	
Mangroves	Major			Major		Major
Off shore islands	Minor			Minor		

Table 36 Effects of Hurricane Ivan to Environmental Assets in each Parish⁴²

One of the other problems associated with environmental assessment of disasters is the difficulties encountered in calculating the population that suffers loss of well being: ecosystems are assets(natural capital) from which goods and services are derived for the general public. Table 5 has therefore been constructed to show how the hurricane has impacted upon the goods and services that are normally derived from the major ecosystems in Grenada.

⁴¹ Source OECS field interviews

⁴² Source OECS ground truthing

Ecosystem	Goods	Services
Forest ecosystems	Timber Fuelwood Drinking water Non-timber products (fruit, plant medicines, wildlife) Genetic resources	Maintain array of watershed functions (infiltration, purification, stabilisation) Remove air pollutants, emit oxygen Cycle nutrients Maintain biodiversity Sequester atmospheric carbon Moderate whether extremes and impacts Generate soil Provide aesthetic enjoyment and recreation
Agro-ecosystems	Food crops Crop genetic resources	Maintain limited watershed functions (infiltration, partial soil protection) Provide habitats for birds, pollinators, soil organisms, etc. important to agriculture Build soil organic matter Sequester atmospheric carbon
Freshwater ecosystems	Drinking and irrigation water Fresh water fisheries Genetic resources	Dilute and carry away waste Cycle nutrients Maintain biodiversity Provide aquatic habitat Provide transportation corridor Provide for aesthetic enjoyment and recreation
Coastal ecosystems	Fisheries Seaweeds (sea moss) Wood for charcoal Genetic resources	Moderate storm impacts (mangroves, barrier reefs) Provide wildlife (marine and terrestrial habitat) Maintain biodiversity Dilute waters Provide for aesthetic enjoyment and recreation
Reef Fisheries	Minor	The habitat for reef fisheries received minor damage. There is, however, a reported increase in spear fishing of reef fisheries after the hurricane.

Table 37 Goods and Services Provided by Ecosystems in Grenada⁴³

Solid Waste Management

The hurricane has created large volumes of wastes. Table 6 below seeks to identify the waste stream, volume of each waste stream and the way in which it is being managed, two weeks after the event.

⁴³ Adapted from World Resources Institute (2001)

Types of Waste	Estimated volume	Cost of Removal in EC\$	How disposed
Fabric and clothing	NA	NA	Burning Disposed as household waste
Zinc Roofing (residential only)	4,000 tonnes	\$1.6mil	Left on the roadside Dumped in unauthorized locations (national stadium, Tanteen, Westerhall)
Bulky waste (mainly wood from destruction to property)	50,000 m ³	\$1.1mil	Left on the roadside Dumped in unauthorized locations
Demolition waste	800,030 m ³	\$2.35mil	Left on the roadside Dumped in unauthorized locations
Fallen Trees	130,000m ³	\$3mil	Left on the roadside Still lying along river banks

Table 38 Type and Volume of Waste after Hurricane Ivan⁴⁴

The volumes identified above were calculated on the basis of the waste that still remains to be cleared, two weeks after the passage of the hurricane.

Valuing the Damage

The purpose of assessing damage is to identify the magnitude of the impact of the environmental resources and services and on the economy of the country. Damage may be valued in different ways, based on the end use to which the information will be put. The two values are full economic loss and remediation cost. The full economic loss is used to gauge the impact of the event on the national economy.

The simplest method of crudely estimating full economic cost on any environmental asset is to multiply the value of the asset by a factor that represents the extent and intensity of the damage. In Grenada, as is true in the rest of the OECS sub-region, national accounts do not include environmental assets.⁴⁵ Consequently, as observed from the tables above,

⁴⁴ Volumes provided by Ewald Spitaler of OXFAM (personal communication)

⁴⁵ Some of the value of environmental services is, however, included in the statistics of such sectors as agriculture and tourism. Some of the value of environmental services is, however, included in the statistics of such sectors as agriculture and tourism.

the damage assessment has not been able to quantify the economic loss of the environmental assets and services as a result of Hurricane Ivan.

In the absence of full economic loss, the most appropriate response to assessing damage to environmental assets is to cost the remediation. These values are particularly useful in determining the estimates for financial assistance. However, remediation costs are based on the nature of the remediation work to be undertaken and must be estimated on a case-by-case basis. Some of the remediation costs are also provided under the chapter dealing with agriculture, forestry and fisheries.

III MACROECONOMIC EFFECTS

This chapter comprises four sections. The first section presents an estimation of the summary of damages (direct and indirect) and an evaluation and interpretation of the results. The second section describes the macroeconomic trends in the previous year (i.e., the year prior to the disaster). The third section analyses the short run (2004) and medium run (2005-2007) expected performance of the economy without the disaster. The final section provides a macroeconomic assessment of the disaster. The second, third and fourth sections survey the overall economic trends of the economy, fiscal policy, the external sector and the financial system to the extent that is permitted by the availability of data. The last section also gives a detailed analysis of the expected performance of the main economic sectors. In addition the fourth section considers the effect of the disaster on the evolution of prices and the level of employment.

All estimations were carried out on the basis of official data and also on information provided by private sector organisations. They are presented in Eastern Caribbean Dollars.

The effect of the damages are significant. They amount to twice the current value of GDP. By far the most important component of overall damages, losses or costs is the direct damage. In relative terms the overriding damage is concentrated in the housing sector. As well the damage has important implications at the social level since it has affected those sectors that are labour intensive, in particular agriculture and tourism.. The effects of the Hurricane are bound to curtail the level of employment.

In the year in which the disaster occurred (2004) overall GDP is project to contract by – 1.4. While the tourism sector will most likely register a severe downturn, agriculture is expected to contract by –1%. The above average output of the sector (especially of traditional crops) in the first half of 2004 will partly offset the halt in its ouput in the last three months of the year. The sector will register the full effects of the Hurricane in 2005 (-39%). The manufacturing sector that had registered negative growth rates in past three years and is projected to maintain this trend in 2004. Contrarily the construction sector will expand due to the reconstruction and recovery efforts in the housing and tourism sectors.

Nowwithstanding the devastating effects of the disaster there are safety valves which if appropriately identified and managed can act as buffer stocks to the general economic downturn. The development of short term crops in agriculture, the effect on the construction sector on related economic activities, and the cruiseship and yachting industry are but a few examples.

One of the most important challenges that policy makers will face is to match those safety valves with the pressing needs of the population and with the concomitant increase in the supply of labor provoked by the effects of the Hurricane on the productive sectors and in particular on labor intensive activities.

1. Summary of damages

The total damage of Hurricane Ivan is estimated to be 2,4 billion EC\$, that is more than twice the current value of GDP. The bulk is concentrated in direct damages. These account for 89% of the damage, 201% of GDP. For its part indirect damage accounts for 11% of the damage (26% of GDP). (See Table 37).

The results highlight the fact that, as described in this report, most of the damage was concentrated in infrastructure and in particular in housing, as 89% of the housing stock registered some or other type of damage caused by the Hurricane.

Sector	Direct damage	Indirect damage	Total
Agriculture	54	46	100
Manufacturing	18	4	22
Wholesale and retail trade	...	11	11
Tourism	305	101.2	406.2
Electricity	70	21	91
Water/sewage	7	1	8
Telecommunications and broadcasting	76.5	62.4	138.9
Cable	8	5	13
Education	195	1	196
Transport	10.3	1.2	11.5
Housing	1,372	9	1381
Health	11	0	11
Total	2,127	263	2389.6

Table 37 Summary of direct and indirect damages Millions of Eastern Caribbean Dollars

In accordance with this finding, when seen in relation to nominal GDP, the damage to housing alone is equivalent to 1.4 times the money value of GDP (that is the value of the flow of goods and services produced by Grenada in a year) (See table 38 below).

The agricultural sector recorded a level of damage (10% of GDP) equivalent roughly to its contribution to GDP. In the case of agriculture direct damage was close in magnitude to that of indirect damage. This reflects mainly the fact that the damage not only wiped out traditional crops but also that as a result the source of income of traditional farmers was been destroyed and will not be easily substituted.

In the case of tourism direct damage (41% of GDP) reflects not only the damage to tourist accommodations but also to yachts. The tourism's sector flow of income will be severely affected in the last three months of the year but gradually the sector will witness some recovery. The sector is expected to be close to fully operational at the end of 2005.

Sector	Direct damage	Indirect damage	Total
Agriculture	0.05	0.05	0.10
Manufacturing	0.02	0.00	0.02
Wholesale and retail trade		0.01	0.01
Tourism	0.31	0.10	0.41
Electricity	0.07	0.02	0.09
Water/sewage	0.01	0.00	0.01
Telecommunications and broadcasting	0.08	0.06	0.14
Cable	0.01	0.01	0.01
Education	0.20	0.00	0.20
Transport	0.01	0.00	0.01
Housing	1.37	0.01	1.38
Health	0.01	0.00	0.01
Total	2.13	0.26	2.39

Table 38 Summary of direct and indirect damages In relation to of GDP

Damages to electricity, as a result of the impact of the wind on electrical posts and on building structures and the concomitant damages to telecommunications are also significant (9% and 14% of GDP).

Finally the quantification of the loss to the education (20% of GDP) underscores the severe social consequences of the disaster. Indeed, while the economic effects is pressing need to be solved in the short run, the social consequences of Hurricane Ivan, in the long run may mostly concentrated in the social sectors of the economy.

2. The pre-disaster situation

2.1 General trends

Since 1980, Grenada has undergone two phases of economic growth (See Figure 9). The first one lasted from 1980 until 1987. The second one began in 1993 and was interrupted by the effects of the September 11th events. Following two years of negative growth (-4.3% and -0.4% in 2002 and 2003 respectively) the economy clearly recovered in 2003 and expanded at a rate of 5.7% (the highest among the OECS and also among CARICOM economies) (See table 48).

In 2003 growth was mainly propelled by the construction sector and the tourism industry. In that year construction registered the highest rate of growth in at least a decade (29%) and its contribution to GDP reached 9.8%. Construction activity responded mainly to the initiative of the private sector and public capital expenditures.

The robust performance of the tourism industry (6% and 14% in 2002 and 2003 respectively) indicated that the sector was poised for a definitive recovery following the effects of the September 11th events. In 2003, the total number of visitors and tourism expenditure grew 9% and 23% respectively.

For their part the agricultural and manufacturing sectors registered contractions (-2.4% and -2.8%). The behavior of the agricultural sector reflected the reduction in the output of traditional crops (nutmeg, banana and cocoa). The evolution of the manufacturing sector responded to declines in the production of animal feed, technical difficulties in obtaining raw materials for the manufacture of rum, and shifts in the production of flour to other sources.

The increase in aggregate output and in particular the dynamism of the construction sector translated into a higher import demand for goods. This led, in conjunction with the contraction in the production of traditional export crops, to a widening of the merchandise trade deficit (35% and 43% of GDP in 2002 and 2003). The result in the merchandise balance was reinforced by profit repatriation outflows (35% of GDP in 2003), and was partially offset by the surplus in the services sector (11% and 14% of GDP for 2002 and 2003). The overall result was a widening of the current account deficit from -29% of GDP in 2002 to 35% the following year.

At the same time the greater demand for imports expanded tax revenues which jointly with expenditure restraint improved the fiscal position of the authorities.

2.2 Fiscal policy

In 2003 the overall fiscal deficit declined in relation to the previous year (-19% to -4.9% and -21% to -10% with and without grants respectively). This resulted from an increase in current revenues coupled with a decline in capital expenditures.

Current revenue increased significantly by \$31.0m or 10.6% in 2003 when compared with the outturn in 2002. This increase was mainly attributed to higher revenue from taxes particularly from taxes on international trade. This was driven by robust growth in imports particularly construction materials, motor vehicles, telecommunication accessories and consumer goods. As a result the government recorded a current account surplus of \$38.4m, 3.3 per cent of GDP compared with \$9.3m or 0.9 per cent of GDP in 2002.

Recurrent expenditure increased slightly by \$1.9m or 0.7%. Contributing to this slow increase in recurrent expenditure was a moderate growth in salaries and allowances, which reflected a 2.5% increase in salary payments for the year 2002 and interest payments. Capital expenditure declined by 89.0m (36.4%) to \$155.4m and was financed mainly by external loans.

Central Government debt, excluding guaranteed debt, moved from \$909.9 million EC\$ (84.6% of GDP) in 2002 to \$984.0 million EC\$ (83.3% of GDP) in 2003. The domestic debt stock represented 22.9% of the total.

After recording significant growth in 2002 with the contraction of the US \$100.0m bond, at the end of 2003 central government's external debt grew by 6.9 per cent to \$731.7m. External debt service to current revenue also represented 21.8% in 2003 and is estimated to remain at that level during 2004.

2.3 The balance of payments

During 2003 the overall balance of payments position of Grenada was estimated to have deteriorated as a deficit of \$34.6 million EC\$ was recorded in contrast to a surplus of \$84.3 EC\$ in 2002. This outturn reflected primarily activity on the current account as the deficit widened by 17.9% to \$400.9m (33.9% of GDP) due to the increase of the merchandise trade deficit by 33.5% to \$511.2m. The expansion in the merchandise trade deficit over 2003 was influenced by a higher import bill primarily for construction and tourism related purposes.

Net inflows on the services account were estimated to have grown by 36.2 %to \$165.1 million EC\$ in 2003. These developments were largely attributable to an increase in inflow on the travel account and reduced outflows on the other business services account. On the income account the deficit grew by 3.6% to \$152.4 million EC\$ in 2003 due primarily to interest payments.

On the capital and financial account, the surplus improved from \$278.9 million EC\$ in 2002 to \$284.9 million EC\$ in 2003 due to a fall in other liabilities payments. The surplus on the financial account declined due to a fall in the inflow of official bond proceeds.

2.4 Developments in the financial system

Consistent with the growth in the economy, total monetary liabilities of the banking system increased by 8.0% to \$1,260.4 million EC\$ during 2003 compared with growth 7.1% in 2002. The growth in M2 reflected expansions in both the narrow money supply (M1) (13.7 per cent) and quasi money (6.7 per cent). The increase in M1 was influenced by a 14.3% expansion in private sector demand deposits. Of quasi money private sector savings deposits rose by 9.6% while private sector foreign currency deposit increased by 20.8 per cent.

Over 2003 domestic credit grew by 5.4% to \$978.5 million EC\$. Net credit to the central government from the banking system increased by 78.2% (\$55.5m) to \$126.6 million EC\$. This is in contrast to the development in 2002 when net credit fell by 25.0 per cent,

reflecting increased deposits associated with proceeds from a bond floated on the international capital market. Commercial bank credit to the central government rose by 24.5 per cent to \$144.0 million EC\$, well above the 9.7 per cent rate of growth in 2002. This performance was partly attributed to an increase in commercial bank holdings of treasury bills and debentures and the granting of additional loans and advances. The central government's deposits in the banking system fell by 35.5 per cent to \$32.3 million EC\$, following strong growth in 2002. Lending to the private sector grew by 3.1% to \$923.7 million EC\$.

During 2003 the net foreign assets of the banking system rose by 23.9% (\$78.2 million EC\$), consistent with the growth in monetary liabilities and the slower growth in domestic credit. The net foreign assets of the commercial banks doubled to \$181.3 million EC\$. Grenada's imputed share of the reserves held by the Central Bank was down by 5.3% to \$224.7 million EC\$, indicative of the overall deficit on the balance of payments account. Liquidity within the commercial banking system remained high during 2003.

As the economy continues to expand, the total monetary liabilities of the banking system are estimated to increase by 6.5% to \$1,342.2 million EC\$ in 2004. Domestic credit is expected to grow by 8.5% reflecting growth in credit to both the central government and the private sector. The net foreign assets of the banking are expected to increase by 2.3% to \$415.1 million EC\$ in 2004. In line with an average import cover of 4.3 months, Grenada's imputed share of the ECCB reserves are estimated at \$233.8 million EC\$ at the end of 2004.

3. The short and medium run expected performance of the economy

without the disaster 2004-2007

3.1 Overall trends

Based on projections prior to the impact of hurricane Ivan, the economy was estimated to grow by 4.7% in 2004 (See table 48). This growth was expected to be fuelled mainly by developments in agriculture, tourism, and banking and insurance. Agriculture was estimated to grow by 3.6% resulting from an improved performance of the traditional crops as well as the continued increase in the non-traditional crops. The hotel and restaurant sector was projected to increase by 8.0%. For the first half of 2004 value added in this sector would have benefited from a 9% growth in stayover arrivals. This growth is expected to have spill over effects in the more service-oriented sectors particularly in communications, transportation and banks and insurance. Among the other sectors, construction was expected to grow by 5.0%.

The preliminary outturn of central government fiscal operations for 2004 showed a current account surplus of \$17.5 million EC\$, which represents 1.4% of GDP and an

overall deficit of \$60.6million EC\$, equivalent to 4.5% of GDP. Current revenue was expected to grow by \$31.8 million EC\$ as a result of the expansion in economic activity. Both capital and recurrent expenditure was projected to increase, resulting in a lower current account balance relative to the outturn in 2003. The growth in capital expenditure will be based on ongoing implementation of the PSIP while recurrent expenditure will increase in part due to higher outlays on personal emoluments.

Over 2004, prior to the occurrence of the disaster, the current account deficit of the balance of payments was estimated to contract albeit marginally by 1.5% to \$395.0 million EC\$. This performance was based upon a narrowing in the merchandise trade deficit as imports were projected to contract as the construction boom slows. As a result of the weak performance of the agriculture and manufacturing sectors on the international market, merchandise exports were estimated to contract by 3.4% to \$102.1 million EC\$ in 2004. On the capital and financial account the surplus is estimated to contract by 9.7% to \$358.8 million EC\$ due to a further reduction in official receipts.

As the economy continued to expand, the total monetary liabilities of the banking system were estimated to increase by 6.5% to \$1,342.2 million EC\$ in 2004. Domestic credit was expected to grow by 8.5% reflecting growth in credit to both the central government and the private sector. The net foreign assets of the banking system were expected to increase by 2.3% to \$415.1 million EC\$ in 2004. In line with an average import cover of 4.3 months, Grenada's imputed share of the ECCB reserves was estimated at \$233.8 million EC\$ at the end of 2004.

Over the medium term (2005 to 2007) prior to the event, the economy was projected to grow at an overall average rate of 5.0%. In 2005 the economy was expected to grow at approximately 5.0% due to growth in agriculture, construction and tourism. The agricultural sector was expected to grow by 12.0%, due to the anticipated peak year for the nutmeg industry, as well as the continued improvement of the non-traditional crops. Construction was projected to grow by 7.0%, due to the preparations to host some of the 2007 World Cup cricket matches. In the hotel and restaurant sector, growth of 6.0% was expected for 2005, due to improved performance of stayover visitor arrivals.

The economy was expected to continue to grow in 2006 by 4.8%, as the construction sector (10.0%) and tourism industry (6.0%) continued to maintain their levels of growth, due to the preparation of the staging to the World Cup and the high increase in tourist arrivals.

A higher level of growth of 5.2% was anticipated in 2007, influenced mainly by the development in the hotel and restaurant sector (12.0%) and other tourism related sectors due to activities associated with hosting the World Cup in 2007. Construction was expected to grow by approximately 6.0%.

3.2 Fiscal Accounts

The preliminary outlook for 2004, without the disaster, showed a current account surplus of \$29 million EC\$, representing 1.3% of GDP and an overall deficit of \$131.8 million EC\$, equivalent to -4.5% of GDP (-9.3% without grants). Current revenue was expected to grow by \$90 million EC\$ as a result of the expansion in economic activity. Both capital and recurrent expenditure were expected to increase resulting in a lower current account balance relative to the outturn in 2003. The growth in capital expenditure was seen to be developing in line with ongoing implementation of the PSIP while recurrent expenditure will increase in part due to higher outlays on personal emoluments.

Over the medium term 2005 to 2007, the surplus on the current account is projected to move from \$22.6m (1.7% of GDP) in 2005 to \$38.5m (2.5% of GDP) in 2007. The improvement in central governments current account position over the medium term will be as a result of the growth in revenue outpacing that of current expenditure. Of the recurrent revenue items, taxes on international trade which represents approximately 50.0% is forecasted to increase on average by 6.5% from \$189.2m in 2005 to \$214.6m in 2007. In line with the forecasted growth in economic activity taxes on domestic goods and services is expected to increase on average by 8.1 per cent to \$64.3m (4.1 per cent of GDP) in 2007.

During the period 2005 to 2007 recurrent expenditure was forecasted to increase on average by 5.1 per cent to \$392.8m in 2007. Personal emoluments, the major component of recurrent expenditure was forecasted to grow on average by 5.5 per cent to \$177.5 million EC\$ in 2007. The growth in personal emoluments would have resulted from incremental salary increases to public officers and the implementation of specific wage increase agreements.

The overall fiscal operations of the central government are forecasted to fluctuate over the medium term. The overall deficit was expected to move from \$111.0 million EC\$ (8.3 per cent of GDP) in 2005 (-10.2% without grants) to \$117.4 million EC\$ (7.5 per cent of GDP and 9.5% without grants) in 2007.

Central government's debt was forecasted to increase by 5.4% in 2004 and over the medium run by 8.8% on average reaching 1,020.2 million EC\$ in 2007. Over 2004 it was also expected that central government external debt grow by 16.2 per cent to \$850.3m.

3.3. External Accounts

Over 2004 the current account deficit was estimated to contract albeit marginally by 1.5% to \$395.0m. This result was influenced by a narrowing in the merchandise trade deficit as imports were projected to contract responding, in turn, to the slowdown in construction activities. As a result of the weak performance of the agriculture and manufacturing

sectors on the international market, merchandise exports were estimated to contract by 3.4% to \$102.1 million EC\$ in 2004. On the capital and financial account the surplus was estimated to contract by 9.7% to \$358.8 million EC\$ due to a further reduction in official receipts.

Over the medium term 2005 to 2007, the current account deficit is forecasted to increase on average by 5.5% to \$434 million EC\$ in 2007. The growth in the deficit was seen to respond to the expected higher import bill associated with the importation of items to facilitate the country's hosting some world cup cricket games in 2007. From 2005 to 2007 merchandise exports were forecasted to grow on average by 5.9% to \$118.7 million EC\$ due in part to some recovery in demand on the international market for the output of traditional crops and manufactured items.

Net inflows on the services account are projected to increase to \$276.6 million EC\$ in 2007. These developments were be associated with strong growth in all categories of visitor arrivals. On the income account, the deficit was expected to widen to \$205.0 million EC\$ in 2007 attributable to interest payments as the debt expands. Net current transfers were expected to grow moderately over the period 2004 to 2007 in line with the growth in industrialized countries.

The surplus on the capital and financial account was expected to grow over the medium term influenced by activity on the financial account. Net inflows on the capital account were expected to increase from \$99.0 million EC\$ in 2005 to \$107.2 million EC\$ in 2007 as a result of a steady increase in capital transfers. On the financial account direct investments were estimated to increases related to construction activities such as a marina on the sister island of Carriacou and the Levera project.

3.4 Monetary Accounts

In line with the expected expansion of the economy, the total monetary liabilities of the banking system were estimated to increase by 6.5% to \$1,342.2 million EC\$ in 2004. Domestic credit was expected to grow by 8.5% reflecting growth in credit to both the central government and the private sector. The net foreign assets of the banking were projected to increase by 2.3% to \$415.1 million EC\$ in 2004. In accordance with an average import cover of 4.3 months, Grenada's imputed share of the ECCB reserves were estimated at \$233.8 million EC\$ at the end of 2004.

Over the medium term 2005 to 2007 monetary liabilities were expected to grow on average by 7.6% to \$1,672.0 million EC\$ in 2007. Domestic credit was expected to increase over the medium term, as the central government utilised the domestic banking system to finance a portion of its overall deficit.

With the anticipated growth in economic activity the expected reliance on the banking system by the private sector would also have contributed to an increase in domestic

credit. The net foreign assets of the banking system are forecasted to increase over the medium term on average by 3.7% to \$459.7 million EC\$ in 2007. Based on an average import cover of 4.3 months, Grenada imputed share of the ECCB reserves was forecasted to increase to \$278.4 million EC\$ by 2007. As well commercial banking liquidity was forecasted to remain high over the medium term.

3.5 Assumptions

The major assumptions underlying the growth projections without the disaster are as follows.

Domestic Exports

Nominal contraction estimated for 2004.

For the period 2005 to 2007 growth based on resumption of three-year cycle for nutmeg and nutmeg oil from 2005.

Domestic Imports

Fall off expected in 2004. Over the medium term imports moved in line with the anticipated requirements of the tourism industry and construction sector.

Travel – Visitor Expenditure

10.1 per cent increase in travel credit expected in 2004 followed by some further increases over the medium term. Based on discussions with Grenada Tourist Board.

Portfolio Investment – Other Profits and Dividends

Debit in 2004 and over the medium term refers to bi-annual interest payments on US\$100m bond and other official bond payments.

Direct Investment – Other

In 2003 funds related to investment statistics captured by the GIDC (\$68.7m), St Georges University (\$20.0m) and other investments. Over the medium term financial inflows will be related to the Levera project and several marina projects around the island.

Other Public Sector Long term Loans

Includes proceeds of two bond issues in 2003 - US\$100m (Bears Sterns) and US\$10m (Unit Trust Corp in T'dad)-only US\$3m disbursed in Nov 2002. Over the medium term external proceeds necessary to assist with the funding of the fiscal deficit.

Financing

In 2003 a significant portion of change in Government Foreign Assets represents US\$7.0m disbursed from UTC Trinidad. Over 2003 Grenada also drew down \$12.5m of its imputed reserves at the Central Bank to finance the deficit on its balance of payments.

Over the medium term financing for the balance of payments represented the change in imputed reserves at an average import cover of 4.3 months.

GDP by Sector

Agriculture

Agricultural production is projected to increase from 2005 based on likely developments in the nutmeg, cocoa and banana industries. Nutmeg production should benefit from secondary and tertiary processing; banana production should benefit from the organic project; and cocoa output from a revitalisation programme.

Fishing

New fish market to be opened in Grenville in 2003.

Manufacturing

Activity in the manufacturing sector is expected to improve in 2005 with the establishment of an agro-processing plant.

Electricity and Water

Based on trend.

Construction

Includes construction work on the Levera project, second phase of the cruise terminal, marine development and other construction activity in preparation for the 2007 cricket world cup.

Hotels and Restaurants (Tourism)

In 2005 and beyond sector is expected to improve further based on factors such as increased marketing and additional airlift.

Air Transport

Based on performance in hotels and restaurants.

Road Transport

Based on performance of hotels and restaurants and construction.

Sea Transport

Based on cargo landed and loaded of expected projects.

Communications

Some sectoral growth is anticipated from 2005 and beyond with the establishment of two additional communication providers. Nominal growth is also projected thereafter with recovery in the tourism industry.

Government Services

Based on natural increase in employment of government sector and future increments.

Other Services

Growth projected.

Consumer Price Index is expected to increase by 2.5 per cent in 2005 and over the rest of the medium term.

3.6 The Fiscal accounts

The domestic economy is expected to grow in 2005 by 5.0 per cent. Real growth of 4.9 per cent and 5.1 per cent is projected over 2006 and 2007 respectively.

Inflation, which has averaged around 1.0 percent over the last couple of years, is expected to average 2.5 per cent over the medium term.

Monetary Liabilities are projected to grow steadily during the period 2005 – 2007. The anticipated growth in monetary liabilities is expected to result in large part from the projected increase in domestic credit to the Government and the Private Sector.

Imports of goods and services are projected to grow on average at around 6.0 percent during the period 2005 –2007.

Revenue projections under the baseline scenario are based on the assumption that there are no further changes in the tax system during the period 2005 –2007. The systematic relationship between the major tax categories and their respective bases is assumed to be unitary. Expected developments in the proxy bases (Nominal GDP, Imports and Private Consumption) are used to forecast fiscal revenues.

A very conservative approach was taken with respect to recurrent expenditure projections. With the exception of interest payments, the growth in the other categories

was based on: (I) expected inflation rate, (ii) the growth in nominal GDP, and; the annual average growth rate of the particular category. Interest payments were estimated using the projected increase in the stock of external and domestic debt and the average implied interest rate for the respective category.

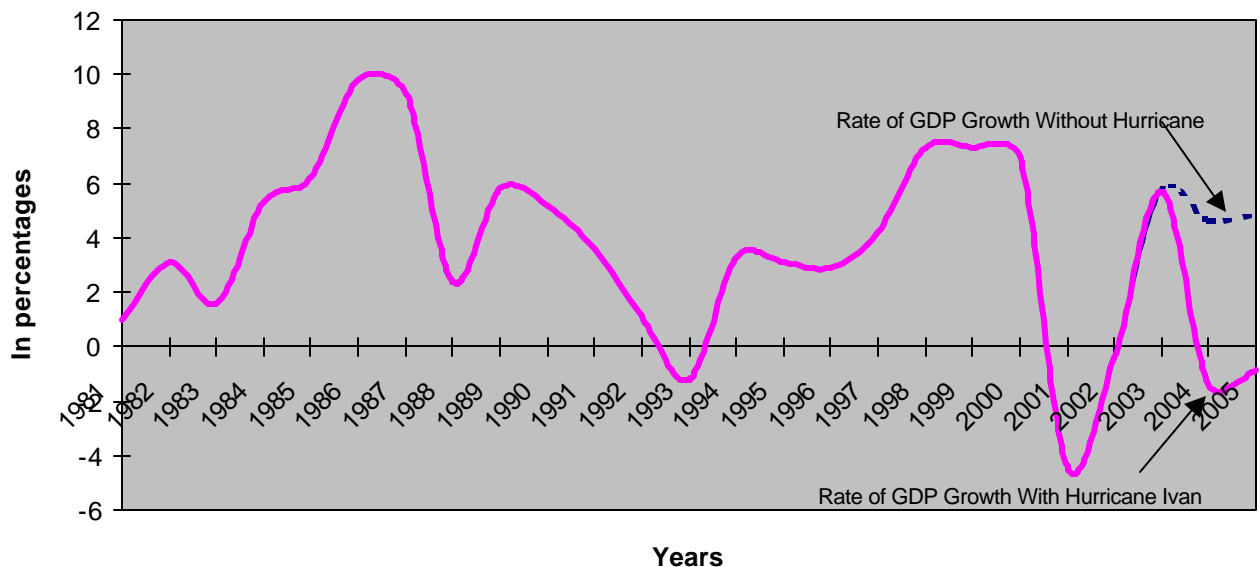
Capital expenditure was projected at 9.5 percent of GDP over the period. Our assumption is that by cutting capital expenditure too thin, there is the risk of unfavourably affecting projects and programmes needed to spur economic growth.

4. The post disaster macroeconomic assessment

4.1. GDP growth

As a result of the Hurricane GDP growth is expected to contract in 2004 by -1.4% The contraction in GDP growth will respond mainly to the underperformance of most sectors and in particular due to the devastation caused by the disaster in the agricultural sector and in the tourism industry.

Figure: 9
Grenada
GDP growth with an without Hurricane Ivan
1981 - 2005



The agricultural sector (-0.8% taking into account the effects of the disaster) will reflect the full stop in the production of the traditional crops (bananas, cocoa and in particular nutmeg) after the hurricane. Notwithstanding the effects of the overall halt in the production of nutmeg (which represents 35% of the volume output of total crops) in the last quarter of the year growth in agricultural output will be partly or more than fully compensated by the significant growth in nutmeg in the first half of the year (34%). As a result the rate of growth in the volume of nutmeg production will rise in 2004 by 19%. However due the drop in the international price of nutmeg (between January and August, the international unit price of nutmeg declined by 36%) the value sales are projected to decrease by -24%.

A similar outcome can be expected in the case of cocoa. The volume output is forecasted to increase by 17%. The value of production will also rise as the unit prices for the first eight months of the year were higher than those recorded for the same period in the previous year (1.79\$ and 1.94\$ for 2003 and 2004 respectively).

Contrarily mace will register an overall decline in volume and value of -22% and -7% respectively. It should also be taken into account that the production of this crop declined by -29.3% in the first half of the year.

The effects of the hurricane on agricultural production will be fully felt in 2005. Cocoa and nutmeg production will cease altogether and banana output will recover only partially after the first nine months of 2005. Non-traditional crops will decline in 2005 but will register marginal growth in subsequent years.

Tourism is projected to contract by 25% reflecting the damage to the hotel plant and the damages of approximately 90 percent of hotel rooms. As a consequence growth in stay over visitors for the last three months of the year is expected to be minimal. This will translate into a significant loss of income during the said period (and also in 2005), which is the basis for the determination of value added in that sector.

For its part the manufacturing sector is projected to contract by 10%, as most of the enterprises suffered damages to buildings and stocks. In particular, some industries were adversely affected by the complete depletion of stocks in the aftermath of the Hurricane.

The wholesale and retail sector was also adversely affected by the destructive trading activity that took place following the Hurricane and the loss of stocks immediately after the Hurricane. Consequently the sector is not projected to record growth in 2004.

The construction sector is poised to register positive growth in 2004, which is estimated at this time at 15%. This reflects the rehabilitation and recovery efforts following the Hurricane. In the public sector, construction activity will be focused on developing the

social infrastructure and restoring public buildings. This will be financed with grants and loans. Activity in the private sector, dominated by home reconstruction will be finance, only partially, from insurance inflows and migrant transfers.

4.2. Fiscal policy

For 2004, the secondary fiscal effects will include a widening of the fiscal gap. The fiscal deficit, taking into account the effects of the disaster, is projected to increase to –145 EC\$ million dollars (-60.6 EC\$ million in 2003) including grants. This represents 12 per cent of GDP taking into account grants (-18.7% without grants).

The fiscal performance will reflect a decline in revenue due mainly to the contraction in GDP, which will affect negatively the revenues from tax collection. Tax revenues are expected to decline from 303.5 to 246.3 million EC\$ (-19%).

At the same time the decline in GDP will have a negative impact on revenues corresponding to international trade and transactions. This category will witness a decline from 182.2 to 144.7 million EC\$ (-21%). Nonetheless, the economy is bound to witness an increase in import growth reflecting activities related to emergency efforts, which are not subject to taxes and duties.

On the expenditure side, total expenditures will increase (474 and 508 million EC\$ without and with taking into account the effects of the disaster). This result will be influenced by developments on both the capital and current account (318 and 335 million EC\$ without and with the disaster).

The behavior of current expenditures will reflect efforts at containing its growth in the last quarter of the year. This reflects in part the fact that contractors are providing free services to the government for the undertaking of clean-up operations following the natural disaster. The government's involvement comprises the provision of fuel and oil. At the same time the government is planning to reduce its transfers and part of its demand for goods and services. Wages and salaries will not be significantly affected, as they are mainly non-discretionary expenditures.

Capital expenditures are expected to rise from 135 to 173 million EC\$ mainly as a result of rehabilitation of schools, government buildings in need of urgent attention and improvements to the road network.

The fiscal deficit will be financed by a larger inflow of grants (57 and 81 million EC\$ in the pre and post disaster scenarios) and the contract of additional loans. The inflow of grants is mainly bilateral and responds to disaster relief. The additional loans are geared to support capital expenditures.

Over the medium term, the fiscal deficit of the central government will be gradually reduced. The revenue base will be recovering while efforts will be made to control the

level of expenditures, particularly on goods and services. However, as a result of the previous year's fiscal performance interest payments on the debt will rise unless a moratorium on the public debt is granted as a result of the devastation of the disaster. Other categories of current expenditure will continue of pre-disaster projected growth path.

Capital expenditures will register an increase over the medium-term as result of payments associated with the disaster reconstruction and rehabilitation efforts.

4.3. Balance of payments

Following the disaster the deficit of the current account will increase from 372 (pre-disaster scenario) to 450 million EC\$ (post disaster scenario). This will be due on the one hand to the higher level of merchandise imports as a result of emergency, recovery and reconstruction activities. On the other hand, merchandise exports are expected to decline by 20 percent to \$61 million EC\$.

Also the services balance will witness a reduction in its surplus due to both supply constraints and demand factors. The supply constraints result from the damage sustained to hotel plants, marina bays, and tourist infrastructure. The demand constraints arise from the suspension of visitor arrivals, mainly stay-over, due to the overall effects of the disaster. The net service movement is expected to move from 176 (pre-disaster scenario) to 101 million (post disaster scenario).

The current account will benefit from money flows of unilateral transfers, and grants. More specifically, it is expected that current transfers to the government will increase from 18 to 53 million (pre and post disaster scenarios respectively). Workers remittances will more than double as family members living abroad provide assistance to their relatives.

The capital and financial account will strengthen associated with the increase in capital grants to the government and higher inflows associated with insurance. Capital grants are estimated to rise roughly by 50%. Insurance flows are projected to reach at the time of this report to 75 million EC\$.

In 2005, the current account deficit will widen as the tourism sector continues to struggle with the effects of hurricane Ivan and production of the traditional crops contracts sharply. Nonetheless the economy will continue to benefit from financial flows mainly grants and insurance inflows.

4.4 Prices and employment

Prices are expected to increase in the short run and moderate thereafter. A very recent field survey conducted indicated that there were no apparent signs of price hikes in

established enterprises. However, there have been price increases reported in some of the retail outlets.

The level of employment will be severely affected. In the manufacturing sector unemployment will increase significantly with the temporary halt in operations of some enterprises. Job losses will be particularly visible in the industries related to the production of garments and furniture.

The tourism industry will also register important increases in unemployment. It is estimated that the job losses could amount to more than 60% of the total labor force of that sector. In the tour operator industry only 3% to 4% of the labor force are likely to be retained while the rest will be in the more optimistic scenario temporarily unemployed.

The construction sector, will be the main drive of employment. However, the sector will not be able to absorb all the labour released from the other sectors because of the specialised skill requirements for rehabilitation and reconstruction purposes.

IV GUIDELINES FOR REHABILITATION, RECOVERY AND A RECONSTRUCTION PROGRAMME

1. Overall Context

The devastating consequences of Hurricane Ivan in Grenada, calls for the adoption of rehabilitation and reconstruction approaches that increase the country's resilience to the economic, social and ecological vulnerabilities that exist in very small island states. Caribbean states are more vulnerable than many other developing countries. Their higher level of vulnerability can be traced back to the interaction of a number of socio-economic and natural characteristics. Most notable among them are:

- Environmental/ecological vulnerability, particularly high exposure to natural hazards;
- Limited land resources and difficulties in waste disposal management;
- Limited diversification and very open economies;
- Weak institutional capacity and high costs of basic infrastructure; and
- Special social vulnerabilities, particularly in the area of limited human resource capacity.

Grenada, in the aftermath of hurricane Ivan, evinced many of these vulnerabilities. The small size of the population and the economy of most Caribbean States mean that in the event of a disaster, large proportions of the economy and population are impacted. In the case of Grenada, the assessment indicated that 80% of the population was affected, and the cost of the damage was estimated to be close to twice the annual national GDP. As a result of the damage caused by hurricane Ivan, many victims that were already poor prior to the hurricane were left in conditions of extreme poverty. Government and the international community may wish to focus their support on addressing the problems described in the preceding chapters. Hurricane Ivan has also exposed the country's weaknesses in land use planning, urban planning, building practices, and hazard mitigation policies. The need for hazard mapping, which can inform land use policy and building practices, has also come to the fore.

The main aims of the proposed projects are to attend to victims of the disaster, rebuild and improve destroyed and damaged assets, reestablish productive and export processes, and in general help to reactivate the process of economic and social development. Two broad areas are suggested for action: rehabilitation and reconstruction. Within those areas it is suggested that focus be placed on:

- **Reinvigorating the economy;**
- **Generating employment; and**
- **Reducing social vulnerability.**

1. The Rehabilitation stage

This stage will seek to normalize the living conditions of the victims while also reactivating the economy – by meeting their vital needs and delivering basic services. The food, health care and employment needs of the population will need to be expeditiously met through the following actions:

- a. Provision of food
- b. Potable water
- c. Control and prevention of diseases
- d. Housing repair and reconstruction
- e. Supply of seeds and basic inputs to affected farmers along with financial support and soft loans.

3. Reconstruction Stage

This is the most crucial stage in the economic and social terms, since it will lead to the full reestablishment of normal living conditions and the county's economic and social development momentum prior to hurricane Ivan. The activities involved in this phase involve:

- b. The implementation of specific projects;
- c. Replacing lost support infrastructure (buildings, roads, sea walls, sewerage systems, electricity, transportation and communications networks);
- d. Replacing lost social infrastructure (schools, housing, hospitals);
- e. Re-establishing agricultural activities;
- f. Generating productive jobs;
- g. Strengthening national emergency committees; and
- h. Reducing the social vulnerability of the affected population.

4. Recommendations

In light of the significance of agriculture both to food security and as a possible source of employment generation, it is recommended that in order to mitigate the current effects and any future disaster of this nature, Government and the donor community may wish to support a number of the following actions, the full listing of which can be found in the annex:

- Focus on food security in the short run ensuring that short term crops and poultry are two immediate interventions.
- Source the necessary inputs to rehabilitate and rebuild the fisheries sector to pre hurricane commercial activity.
- Source early bearing and improved cultivars of crop species for propagation and cultivation.

- Because of the denuded state of the forested and watershed areas, urgent attention should be paid to revegetate the watersheds to allow for some growth and coverage to increase photosynthetic activity and oxygen supply.
- Develop a policy and strategy, which focuses on a commercial led industry approach to agriculture addressing issues of Legal and Institutional Reform; Incentive Regimes and Insurance; and Product Development and marketing.

The yachting industry is an emerging sector of the tourism industry which has the potential for high income earning, generation of employment among the youth, and the possibility for increasing the diversity of the tourism product. At the level of policy, the implementation of standards for the yachting industry is essential. To preserve the integrity of the cruise ship industry, attention has to be paid to increased safety and security of visitors, and improvement in public health. Port infrastructure, including public amenities, will require repair and upgrading.

In the area of infrastructure the following recommendations are made:

- Construction of underground cables for electricity and telecommunications, particularly in the urban towns of St. George's and Grenville;
- Regular maintenance of water supply dam installations;
- Increased usage of building codes in the reconstruction efforts and in building in general;
- Establishment of an agency to exclusively handle the execution of rehabilitation and reconstruction projects;
- Development of a Disaster Management Plan of Action.

In regard to health, the damage to health facilities is of urgent concern. Recommendations for rehabilitation and reconstruction suggest that :

- The government and donors may wish to give urgent attention to the medical laboratory , which is vital for evidence – based medicine ;
- The vast majority of the problems associated with the Health Sector emanated from roof and infrastructural damage to the health institutions.

The following policy measures may minimize damage to buildings in the future:

- Implement and revise where necessary, the existing Building Code,
- Enact a Building Act to boost construction standards for health care institutions;
- Establish a Grenadian Building Authority (GABA) to enforce building regulations for Health care institutions.

Additional recommendations are:

- Transfer refrigerated medical products to the most robust institutions with generators prior to an impending storm.
- Place medical equipment or stock on pallets to avoid water damage.

Despite centuries of agricultural cultivation and recent tourism activity, Grenada, up to the time of hurricane Ivan, still retained some of its mountaintop forests and coral reefs, over 450 species of flowering plants, 150 species of birds, and mostly undamaged landscape vistas. The destruction of the natural environment, is evident everywhere. The following are recommendations which may advance the protection of Grenada's rich natural resource:

- Prior to the passage of Hurricane Ivan, Grenada had embarked on the preparation of a National Environmental Policy and National Environmental Management Strategy. The country may wish to expedite the completion of the policy and Strategy. Unlike most other OECS Member States, Grenada may wish to pursue a policy and strategy that will focus on the re-establishment of significant biodiversity assets lost to the hurricane. An additional focus that is recommended is the creation of livelihood opportunities from the sustainable use and management of environmental assets.
- It is strongly recommended that sound and sustainable environmental considerations and standards be incorporated into all aspects of the post Ivan reconstruction of Grenada. This is particularly true for the rapid deployment of low costing shelter which, should not only be constructed according to internationally accepted building codes, but also constructed in locations that meet basic environmental criteria or which provide for environmental mitigation measures.
- A national physical planning policy has already been completed for the country. Incorporated into this instrument is a land use policy. The Government of Grenada may wish to consider reviewing and enhancing the policy, in light of the lessons learned from the passage of Ivan, and seeking Cabinet ratification of such so that it can be implemented as part of a wider reconstruction programme.

The reduction of the social vulnerability of the population has to be of utmost importance as the government of Grenada seeks to rebuild its society. In the measurement of social vulnerability a number of characteristics have been under consideration. Among them are the strengthening of the education of the population, maintaining optimum health, and achieving a secure and safe environment for people to conduct their business of life. The Government has expressed as a priority, the importance of developing its human resources. In that regard:

- A nationwide, all-age literacy and skills training programme that is gender aware and sensitive, should be developed and supported;
- Relief programmes with incentives for study should be considered;
- Support for Family Life Education throughout the school system from primary age should be instituted;

- Community based income generating projects of a cooperative nature should be explored as the people of Grenada have a strong culture of cooperative activity; and
- Food security for families in need, particularly households headed by women should be supported.

5. Project Proposals

The fundamental factor regarding the viability of any reconstruction process is a country's internal capacity to undertake the rehabilitation and reconstruction process without further imposing on its already limited capacities. Grenada knows best the time frame and priority of its actions and will surely seek to strike a balance between the urgent task of replacing what has been lost and re-building its resilience to withstand similar future shocks. Once the emergency phase is over, rehabilitation and reconstruction programmes will need to be established in order to restore the facilities, assets and services damaged by the devastating effects of the hurricane. While the international community offers it support, the content, priorities and scope of such programmes must necessarily be a national, sovereign decision of Grenada which has to respond as much to the magnitude of the damage as to its pre-existing socio-economic conditions and policies. In any event, reconstruction will need to be carried out on the basis of a significant qualitative improvement over previous circumstances. Observance of building codes to withstand hurricanes and other natural hazards is an essential aspect of reconstruction.

Any strategy for rehabilitation and reconstruction must rest on strengthening the basis for sustained resilience and less vulnerable development with growth. Thus, the proposed mixture of components to build resilience to natural disasters must be compatible with sound economic policies and the necessary structural reforms that will allow Grenada more effective integration into the CSME and into a liberalized global market.

Included below is a sample of priority investment projects deemed important for repair and reconstruction of the Grenadian society and economy. This list of project profiles was developed with the input of national authorities and does not run counter to proposals submitted by other regional and international agencies.

The principle objective of the proposed projects is to present a portfolio that can help to reactivate the process of social and economic development, to re-establish productive and export processes, to re-build damaged assets and to reduce social vulnerability. Each project profile provides basic information on aims, scope, expected results, activities and tasks to be carried out, investments to be made, expected financing, and special characteristics.

Each profile should be subsequently analyzed in order to draw up a definitive project that will help improve the living conditions of disaster victims, and recover the physical and economic losses stemming from Ivan's devastating effects.

V PROJECT PROFILES

GRENADA

INFR -1

PROJECT TITLE: FORMATION OF AN AGENCY TO FACILITATE THE RECONSTRUCTION OF GRENADA**Sector: INFRASTRUCTURE****Sub-sector****Background:**

Given the extent of damages recorded, it is anticipated that there will be a need to comprehensively manage the allocation of major funding expected to flow from donor agencies to the rehabilitation of Grenada. At present all infrastructure works are handled through the Ministry of Works. This Ministry is not expected to have the staffing required to adequately implement the number and scale of projects that it will have to be defined in order to rehabilitate Grenada.

In order that such an agency may operate to the best efficiencies, it is recommended that it be set up as a Statutory Body having a CEO and a Board of Directors who will be answerable to the Prime Minister. It is recommended that the members of the Board of Directors be drawn from:

- The Ministry of Works;
- The Ministry of Finance;
- The Ministry of Housing;
- The local Engineering Association;
- The private sector;
- The OECS.

Project Objectives:

To facilitate the implementation of an agency created specifically to manage and execute, in as efficient a manner as possible, projects which will be identified for the reconstruction and rehabilitation of Grenada.

Duration of the project: 60 months**Date of initiation: April 2005****National Executing Agency: Ministry of Finance and Planning****Newly established National Reconstruction Agency****Description of activities and tasks:**

To implement the legislation required to set up a Statutory Agency for the carrying out of reconstruction projects

The subsequent implementation of projects

Expected results and products:

Efficient and timely execution of projects aimed at the reconstruction and rehabilitation of government and National infrastructure

Financial required investments: (EC\$dollars)

Labour requirements

(work/months)

National inputs:

Imported inputs:

Financial requirements (EC\$dollars)

500,000,00
0

Local:

10,000,000

Special Remarks:

GRENADA	AGRI-2
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PROJECT TITLE: Enhance food security

Sector: AGRICULTURE	Sub-sector: Poultry
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Background: Hurricane Ivan left significant damage to poultry pens and destruction of stock (chicks, feed, pesticides, etc.). Poultry farmers need to reconstruct and repair plants, and purchase stock and supplies to establish the poultry industry and hence their livelihoods.

Project objectives: <ul style="list-style-type: none"> To enhance food security and improve livelihoods of poultry farmers.

Duration of the Project: 6 months Date of initiation: October 1, 2004	National executing agency: Ministry of Agriculture
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Description of Activities and Tasks: The project is intended to replace the heavy losses in equipment reconstruct destroyed pens and to procure layers and broilers and the requisite feed and medication for birds for the 200 destroyed units.

Expected results and products:

Total required investments: EC\$2,981,550: <ul style="list-style-type: none"> Galvanized sheets EC\$16,000 Posts, beams & laths EC\$46,800 500 rolls chicken wire EC\$270,000 80 shredders EC\$400,000 6000 broiler chicks EC\$900,000 6000 layer chicks EC\$1,200,00 Feed & medication EC\$148,750
Financial requirements (dollars) <ul style="list-style-type: none"> Local: External: Donation/grant:
Potential source of financing <ul style="list-style-type: none"> External credit: Donor: FAO, CDB, EU, USAID, IADB, World Bank

Special remarks:

GRENADA		AGRI-3
PROJECT TITLE: Strengthening the capacity and capability of production of planting for the revitalization of the crop sub-sector		

Sector: AGRICULTURE	Sub-sector: Crops
Background:	

Project objectives:

- To enhance food security and generate employment and incomes by strengthening national capacity to propagate and cultivate select crop commodities.

Duration of the Project: 10 months Date of initiation: November 2004	National executing agency: Ministry of Agriculture
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Description of Activities and Tasks: The project involves the repairs to nursery infrastructure on the island and the procurement of selected seeds and cultivars and the requisite pesticides, fertilizers, peat moss, etc. for propagation and immediate planting of selected commodities island wide.

Expected results and products:

<p>Total required investments: EC\$5,798,405:</p> <ul style="list-style-type: none"> • Repair to nurseries & replacement of watering system EC\$5,120,505 • Procurement of seed & other planting material, fertilizers, pesticides, peat moss, seedling trays, manure, sprayers EC\$677,900 <hr style="width: 20%; margin-left: 0;"/> <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: • External: • Donation/grant: _____ <p>Potential source of financing</p> <ul style="list-style-type: none"> • External credit: • Donor: FAO, CDB, EU, USAID, IADB, World Bank
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Special remarks:

GRENADA	No. ENV-1
PROJECT TITLE: WATERSHED CONSERVATION AND PROTECTION:	

Sector: Forestry

Subsector: Environment

Background: Ninety one percent of the forest lands and watershed now lay bare and stripped of the vegetation, which once supported an ecosystem where much fauna and flora benefited directly or indirectly. The 72 watersheds on the island have been devastated. A major concern remains over the (i) the level of water which the aquifers can now support and for how long, (ii) habitats for the wildlife, and (iii) serious soil erosion of the unvegetated hill slopes. Urgent action needs to be taken in the very short run to ensure regeneration and growth of vegetation in the forest and watershed areas. It is important to ensure that, in the drive to vegetate the watersheds and hill slopes, as much of the native biodiversity is maintained.

Project objectives: To rehabilitate all the watersheds in Grenada in order to:

- Prevent soil erosion as a result of the destruction of all canopies of vegetation along the slopes of watersheds;
- Improve water quantity and water quality; and
- Re-establish biodiversity of forest eco-systems.

Duration of the project: 5 year(s)

Date of initiation: Immediate

National executing agency: Forestry Department and the Department of Environment in collaboration with interested voluntary organisations, schools and community groups

Description of activities and tasks:

- Collection and propagation of surviving plant material, especially of the endemic species, from the surviving stock;
- Capture and recovery of wildlife for release in the wild after habitats have recovered sufficiently;
- A forestation of watersheds with fast growing native species;
- River bank stabilisation; and
- Appropriate policy, legal and institutional frameworks for watershed management, including community based approaches.

Expected results and products:

- At least 80% of all watersheds are fully vegetated, with fast growing species native to the major forest communities in Grenada before the passage of Hurricane Ivan, by the end of the project.
- At least 80% of Grenada's biodiversity is re-established by the end of the project.
- Community based river bank stabilisation programmes established in at least 60% of the communities which neighbour major river systems.
- Improved water quality and quantity in at least 50% of the watersheds.
- Genetic stock of native plants and wildlife species preserved and propagated for re-establishment of biodiversity.
- Conduct of an inventory of biodiversity in Grenada, Carriacou and Pettit Martinique.
- Establishment of a herbarium.
- Implementation of appropriate institutional, policy and legal frameworks for integrated watershed management.

Total required investments: US\$1.6mil.

Special remarks:

The project will undertake to create

GRENADA		No. ENV - 2
PROJECT TITLE: CREATING SUSTAINABLE LIVELIHOODS FROM BIODIVERSITY ASSETS		
Sector: Environment		Subsector: Social Development
Background: A number of the communities specialize in handicrafts made from non-timber products. These products have been destroyed in the hurricane and it is anticipated that many women from the target communities will be displaced		
Project objectives: To establish a Small Grants Facility which will enable rural communities to create livelihoods through the sustainable use of biodiversity assets.		
Duration of the project: 3 years		National executing agency: Ministry of Agriculture in collaboration with the Department of Environment and NGOs.
Date of initiation: First Quarter 2005		

Description of activities and tasks: Provision of small grants up to US\$20,000 for the creation of livelihood opportunities.

Expected results and products:

1. A total of at least 10 grants are issued annually to undertake catalytic projects that

<p>Total required investments: US\$700,000</p> <ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs(in-kind) • Imported inputs: _____ <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: \$150,000 • External: \$450,000 • Donation/Loan/Funding: _____ <p>Potential source of financing</p> <ul style="list-style-type: none"> • External credit: • Donor: UNDP, CDB, OAS, EU, Republic Of China 	<p>Special remarks:</p> <p>The Grants Facility will enable the women to obtain funds to cultivate the necessary plant material and to purchase tools, etc. that may have been destroyed by the hurricane.</p> <p>Other resource based livelihoods may include jewelry production from non timber products and marine resources; crafts from banana waste, etc.</p>
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GRENADA	No. ENV - 3
PROJECT TITLE: ENVIRONMENTAL AWARENESS CAMPAIGN	
Sector: Environment	Subsector:
Background: The fragility and vulnerability of island biodiversity has been clearly evidenced by the damage of the hurricane to native species of flora and fauna. This fragility and vulnerability is further exacerbated by the impact of poor management and behavioural practices. Debris from the hurricane has been dumped into a few of the mangroves stands and it is anticipated that as the clean up efforts increase, that there may be indiscriminate dumping in a number of the ecosystems.	
Project objectives: To ensure that there is no further degradation of the biodiversity assets of Grenada, Carriacou, and Petit Martinique.	
Duration of the project: 4 years Date of initiation: 2nd quarter 2005	National executing agency: Department of Environment in collaboration with the Departments of Forestry and Fisheries, local CBOs, NGOs, schools, etc

Description of activities and tasks:

1. Public education and awareness through the use of all available media and social marketing techniques;
2. Provision of small grants (not more than US\$5,000) to undertake catalytic projects on biodiversity conservation and sustainable environmental protection.

Expected results and products:

1. Regeneration and protection of biodiversity stock that had been destroyed by the hurricane;
2. Active school and CBO/NGO programmes on ensuring that biodiversity stock is not loss through natural or man-made events;
3. Infusion of environmental curriculum into primary to junior secondary schools.

Total required investments: US\$250,000
<ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs:
Financial requirements (dollars)
<ul style="list-style-type: none"> • Local: \$50,000 • External: \$200,000 • Donation/Loan/Funding:
Potential source of financing
<ul style="list-style-type: none"> • External credit: • Donor: UNDP, USAID, WWF, RARE

Special remarks:

GRENADA		No. ENV – 7
PROJECT TITLE: REMOVAL OF WASTE DEBRIS		
Sector: Environment	Subsector: Solid Waste	
Project objectives: To remove, for safe disposal, specific types of waste created during the passage of Hurricane Ivan		
Duration of the project: 3 months Date of initiation: Immediate	National executing agency: Grenada Solid Waste Management Authority	

Description of activities and tasks:

1. Preparation of temporary sites to receive specific waste types;
2. Collection and removal of waste to temporary receptacles.

Expected results and products:

1. A clean and safe environment.

<p>Total required investments: US\$3.88mil</p> <ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs(in-kind) • Imported inputs: equipment and Machinery for waste reduction <hr style="width: 20%; margin: 10px auto;"/> <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: \$.25mil • External: \$3.63 • Donation/Loan/Funding: <hr style="width: 20%; margin: 10px auto;"/> <p>Potential source of financing</p> <ul style="list-style-type: none"> • External credit: Donor: CDB, EU, World Bank 	<p>Special remarks:</p> <p>It is estimated that the following types and volumes of waste need to be disposed :</p> <table style="width: 100%; border: none;"> <tr> <td>Galvanised waste</td> <td style="text-align: right;">4,000 tonnes</td> </tr> <tr> <td>Bulky waste</td> <td style="text-align: right;">50,000m³</td> </tr> <tr> <td>Demolition waste</td> <td style="text-align: right;">100,000m³</td> </tr> <tr> <td>Fallen trees</td> <td style="text-align: right;">130,000m³</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td>Cost to remove and transport all waste</td> <td style="text-align: right;">US\$2.6mil</td> </tr> <tr> <td>Equipment & machinery</td> <td style="text-align: right;">.5mil</td> </tr> <tr> <td>Rental of heavy Equipment</td> <td style="text-align: right;">.03mil</td> </tr> <tr> <td>Preparation of temporary Sites</td> <td style="text-align: right;">.5mil</td> </tr> <tr> <td>Total</td> <td style="text-align: right;">US\$3.63mil</td> </tr> </table>	Galvanised waste	4,000 tonnes	Bulky waste	50,000m ³	Demolition waste	100,000m ³	Fallen trees	130,000m ³	Cost to remove and transport all waste	US\$2.6mil	Equipment & machinery	.5mil	Rental of heavy Equipment	.03mil	Preparation of temporary Sites	.5mil	Total	US\$3.63mil
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Total	US\$3.63mil																		

GRENADA	SOC-1
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PROJECT TITLE: REHABILITATION OF EDUCATIONAL FACILITIES

Sector: SOCIAL

Sub-sector: EDUCATION

Background: The education sector suffered considerable damage with the passage of Hurricane Ivan. Damage to the education section was second only to the housing sector in its severity. Schools in all Parishes and at all levels; 74 pre-primary, 57 primary and 19 secondary affecting a total of 150 schools. Some schools also suffered damages as they were used as shelters. Over 30,481 children are being deprived from attending school; at the secondary level 4,032 boys and 5,486 girls are affected. This level of destruction is a particularly hard blow to Grenadian society as much emphasis and hope was placed on education in order to transform the economy and the society overall. The most recent poverty assessment report conclude that human resource strategy which embraces the entire nation and excites it to acquire knowledge and skills was a base for poverty reduction in Grenada.

Project objectives:

- Reconstruction and repair of existing structures, including reinforcement, in order to reduce vulnerability to natural disasters.
- To provide children with a means to continue their education.
- Review the government's Strategic Plan for Educational Enhancement and Development in view of the disaster.
- Review the catchment communities of the existing school boundaries.

Duration of the project: 5 years, done in phases.

National executing agency: Ministry of Education and Ministry of Finance

Date of initiation: Immediate

Description of activities and tasks: Contracting of services of the required technical experts. Procure school materials, equipment and furnishings damaged by the hurricane.

Expected results and products:

- Restoration and construction of Schools at all levels.
- Replacement of school materials, equipment and furnishings

Restoration of libraries and computer facilities.

Total required investments:
EC\$203,000,000.00

- Labour requirements (work/months)

- National inputs:

- Imported inputs:

Financial requirements (dollars)

- Local:

- External:

- Donation/Loan/Funding:

Potential source of financing

- External credit:

- Donor:

Special remarks:

GRENADA	SOC- 10
PROJECT TITLE: Restoration of Important Historical Landmarks in the Town of St. George's	

Sector: SOCIAL

Sub-sector: Heritage Sites

Background: The project stems from the general efforts of restoring Grenada, in particular the Town of St. George, to its pre-Hurricane Ivan, status. Called "A City on a Hill" the town of St. George Grenada, has been the subject of many studies over many years, due to its unique characteristics such as fish scale roofs, Georgian Architecture and system of fortifications. It has also been described for over a century as the most picturesque town in the entire Caribbean. Not only had the town of St. George received special mention from the Georgian Society during the 1930s and 1950s, but also in 1988, it was nominated as one of the monuments of the Wider Caribbean. As recent as August 2003, studies were carried out on the Town as part of the efforts of getting the Fortified System of St. George's, listed as a potential World Heritage Site.

Project objectives: The Project seeks to restore the historical monuments and properties, so that the Town can retain its historical character.

Duration of the project: 12 months

Date of initiation: Immediate

National executing agency: Ministry of Finance and Planning

Description of activities and tasks:

- Training of young artisans to undertake this work.
- Hiring of a consultant to advise on the restoration processes.
- Material for restoration.
- Hiring of a coordinator for management of the project.
- Safeguard and restore the historical archives of Grenada.

Expected results and products: Historical sites and buildings within the town of St. Georges restored to maintain the integrity and uniqueness of the town of St. Georges; as part of the Grenada's national pride and its selling point as tourist attractions. A cadre of trained artisans and skilled persons in historical restoration and preservation. The capacity to facilitate the exchange of information between local and regional inventories. Developed material for use as educational tools, tourists and promotional purposes.

Total required investments:
EC\$ 13,590,000.00

- Labour requirements (work/months)
- National inputs:
- Imported inputs:

Financial requirements (dollars)

Special remarks:

GRENADA	SOC-7
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PROJECT TITLE: CONSTRUCTION OF HOUSING AUTHORITY OFFICES

Sector: SOCIAL

Sub-sector: HOUSING

Background: Hurricane Ivan demonstrated the vulnerability of many building and their unsuitable for withstanding the natural forces of a storm. In many areas of Grenada there were few buildings suitable to withstand winds of upwards to 115mph. The new construction in these areas will provide structures taking into consideration standards that will help in the reduction of vulnerability in cases of tropical storms and hurricanes.

Project objectives:

- To rebuild Sandino Complex and to include main office staff and functions. To restore the complex to its former conditions.

Duration of the project: 6 months

Date of initiation: November 1, 2004

National executing agency: National Housing Authority and Ministry of Finance and Planning

Description of activities and tasks: To repair the industrial institutions comprised of the following: Security office, office building, production plant, main and secondary store rooms, electrical shed, fences and structural areas.

Expected results and products:

- To restore the complex to its former conditions. To house all staff and functions in one location.

Total required investments: EC\$743,800.00

- Labour requirements
(work/months)
- National inputs:
- Imported inputs:

Financial requirements (dollars)

- Local:
- External:
- Donation/Loan/Funding:

Potential source of financing

- External credit:
- Donor:

Special remarks:

GRENADA	SOC-6
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PROJECT TITLE: CONSTRUCTION OF LOW COST HOUSING DEVELOPMENT

Sector: SOCIAL

Sub-sector: Housing

Background: Hurricane Ivan demonstrated the vulnerability of low income earners, living in areas and in houses unsuitable for withstanding the natural forces of a storm. In many areas of Grenada there were few buildings suitable to withstand winds of upwards to 115mph. Almost 28,000 houses or 89% of Grenada's housing stock of 31,122 houses have been damaged or destroyed by Ivan. Approximately 22,000 or 70% requires repair. In some areas the entire housing stock was destroyed. In the village of Après Toute all that remained were piles of wood and sheets of zinc to indicate that houses once stood there. The new construction in these areas will provide housing taking into consideration standards that will help in the reduction of vulnerability in cases of tropical storms and hurricanes.

Project objectives:

- The intention of this project is to address the very serious housing crisis that has been created due to the destruction of houses with the passage of Hurricane Ivan; through the construction of affordable houses for low and middle income households, which can withstand at least a category 3 hurricane. Safer houses provided to the affected population including the indigent population.

Duration of the Project: 5 Years

Date of initiation: November 15, 2004 in three phases. Each phase will include (a) reconstruction (b) refurbish (c) construction and (d) financing.

National executing agency: National Housing Authority, Ministry of Finance and Planning

Description of Activities and Tasks: In phase one to reconstruct 33% of damaged homes, refurbish 33% of concrete homes which sustained structural damages, construct 33% of homes for low income and 33% of homes for middle income and provide finance to 33% of affected persons to refurbish and construct homes.

Expected results and products:

- Houses refurbished and constructed for families who suffered severe housing damage with increased protection to withstand future natural disaster.

Total required investments:
USD\$27,000,000.00

- Labour requirements (work/months)
- National inputs:
- Imported inputs:

Special remarks:

GRENADA	SOC- 5
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**PROJECT TITLE: STRENGTHEN WOMEN'S CAPACITY FOR INCOME GENERATION
ACTIVITIES IN THE POST DISASTER PHASE**

Sector: SOCIAL

Sub-sector: Social and Human Development

Background: The disaster demonstrated not only the vulnerability of people, living in areas and in houses unsuitable for withstanding the natural forces of a tropical storm but the inability of certain agricultural productions to withstand such shocks. Many of the affected households are female headed. Income generation activities are needed to reduce vulnerability and create opportunities allowing the women themselves to improve their situation and quality of life for their families.

Project objectives: Reduce economic vulnerability of poor women.

Duration of the project: 3 years

Date of initiation: Immediate

National executing agency: Ministry of Social Development

Description of activities and tasks: Short-term consultant, training and capacity development activities for women. Market surveys to find niche markets in agro-processing, craft, short crop cultivation, horticulture, poultry farming, meat production and orchards.

Expected results and products: Increased capacity of women to engage in income generation activities in cottage and small scale manufacturing.

Total required investments:
USD\$500,000.00

- Labour requirements
(work/months)
- National inputs:
- Imported inputs:

Financial requirements (dollars)

- Local:
- External:
- Donation/Loan/Funding:

Potential source of financing

- External credit:
- Donor:

Special remarks:

GRENADA	SOC- 9
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**PROJECT TITLE: INSTITUTIONAL STRENGTHENING OF THE NATIONAL EMERGENCY
RESPONSE ORGANIZATION (NERO) AND DISASTER DATABASE**

Sector: SOCIAL

Sub-sector: Disaster Preparedness

Background: The impact of Hurricane Ivan has clearly demonstrated the need for increased capacity at the national and the community levels in emergency preparedness and response. The efficient and effective planning and management of disaster preparedness and response activities requires that the national and community organizations have accurate and reliable data. This data needs to be systematized and easily accessible to those engaged in planning and management efforts.

Project objectives:

- Increase disaster preparedness, management and response capacity at all levels.
- Develop and strengthen a Social Indicators Committee.
Strengthen the capacity of Ministries in the social sector and NERO to gather and analyse data related to disaster preparedness and management.

Duration of the project: One year

Date of initiation:

**National executing agency: NERO, Ministry of
Finance (Technical Corporation Unit & National
Statistical Office)**

Description of activities and tasks:

- Conduct an evaluation of current capacity to respond to the effects of natural and manmade disasters.
- Make recommendations on how to strengthen management, preparedness and response capacity at all levels.
- Review and strengthen the national disaster plan.
- Examine models of good practices within the region in disaster management and mitigation.
- Develop a public awareness programme in disaster preparedness.
- Provide training in disaster management and response, including distribution, data collection and analysis and shelter selection and shelter management.
- Social mobilization.
- Equipment.

Expected results and products:

- Establishment of local emergency management committees.
- Increased participation of civil society.
- Publication of key surveys and studies on disaster preparedness, response and mitigation.
- Increased inter-ministerial coordination.
- Establish and strengthened inter-ministerial database systems.

Total required investments: EC\$500,000.00

- Labour requirements
(work/months)
- National inputs:
- Imported inputs:

Special remarks:

GRENADA	SOC- 2
PROJECT TITLE: PHYCHO-SOCIAL REHABILITATION	

Sector: SOCIAL

Sub-sector: PSYCHO-SOCIAL

Background: People's behaviour changes during emergencies, as do the ways in which they express their emotions. There is frustration and anguish which, among other things, fosters acts of violence. Such reactions to stress and crisis provide a basis for the orientation of mental health efforts and services towards the psychosocial mitigation and the prevention of trauma occasioned by natural disasters and other such emergency situations. Capacity building activities directed at community levels serve to foster local leadership and skills. Sensitization of community leaders, health professionals, educators, and families towards the issues of prevention and care for the psychosocial impact of disasters promotes their ability to understand the situation. Increased awareness lends itself to the focus on preparedness, which benefits communities in managing the process of prevention and recovery from disasters. Skill-building and training enable people to meet the demands of dealing with the concerns before, during and after disasters. In addition, such an orientation fosters coping at the level of the individual, the family, the community and beyond.

Project objectives:

- To assess the psychological impact of disaster in the general population.
- To advance mental health protection and promotion in the general population.
- To promote protection against and prevention of mental health risks.
- To promote the prevention of gender-based violence.
- To promote the provision of psychological, emotional and social assistance needed for the care of women, children, the elderly, and physically and mentally challenged persons.
- To assist persons to develop better coping skills in dealing with issues of displacements.

Duration of the project: 24 months

Date of initiation: Immediate

National executing agency: Ministry of Social Development

Description of activities and tasks:

- Sensitization, awareness-raising, and education of families, educators, health care providers and community and national leaders to the normal reactions of children, youth and adults to crisis conditions.
- Skills-building and training in assessment of post-traumatic stress.
- 'Managing grief and loss' training for families, educators, health care providers, and community leaders.
- Establish a network of community persons trained in crisis management.
- Integrate a psycho-social component in the current disaster management profile by incorporating a Stress-Management in Disasters (SMID) Committee into NERO.
- Develop SMID in conjunction with NERO and other stakeholders.
- Contract the services of a trained professional to coordinate and manage the project.
- Develop the necessary mechanisms and structures to establish a counseling unit.

Expected results and products: Situational diagnosis, increased awareness of crisis reactions, increased coping skills, and decreased risk for mental illness and dysfunctional behaviour associated with trauma and the establishment of a counseling unit.

GRENADA	SOC- 3
PROJECT TITLE: PSYCHO-SOCIAL REHABILITATION FOR CHILDREN	
Sector: SOCIAL	Sub-sector: PSYCHO-SOCIAL
Background: Disasters affect children in different ways, yet the psycho-social impact often remains invisible in studies and goes untreated. There is a need to sensitize the community, especially teachers, caregivers and parents on how to identify signs of psycho-social trauma in children. They also need to be sensitized towards issues of prevention and care for the psycho-social impact of disasters and abuse.	
Project objectives: <ul style="list-style-type: none"> • Develop a cadre of trained teachers, caregivers and parents. • Develop an integrated plan for psycho-social rehabilitation of children who have experienced all forms of trauma. • Create public awareness on the psycho-social impact of disasters on children. 	
Duration of the project: 24 months Date of initiation: Immediately	National executing agency: Ministry of Social Development
Description of activities and tasks: <ul style="list-style-type: none"> • Develop training materials, train teachers, guidance counselors, parents and caregivers nation-wide to recognize the signs and symptoms of trauma and abuse in children. • Develop and produce public service announcement on the care and protection of children. • Train teachers, school administrators and caregivers in psycho-social trauma and rehabilitation. • Sensitize parents and community leaders. • Develop a cadre of Peer Counselors to provide support to affected children. 	
Expected results and products: <ul style="list-style-type: none"> • Package of training materials for psycho-social rehabilitation aimed at teachers, caregivers, parents and children • Full electronic and print media campaign. • Poster competition for children. • Workshops at national and district levels. 	
Total required investments: EC\$400,000.00 <ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs: Financial requirements (dollars) <ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding: Potential source of financing <ul style="list-style-type: none"> • External credit: • Donor: UNICEF 	Special remarks:

GRENADA		SOC- 8
PROJECT TITLE: SHELTERS ALSO SERVING AS COMMUNITY CENTERS IN GRENADA		
Sector: SOCIAL	Sub-sector: Ministry of Social Development	

Project objectives:

- Create structurally sound building to serve as shelters in time of disasters that will also serve as centres for community development.
- Serve as community libraries, adult skills training centres and adult literacy centres.
- Community computer activity centres.
- Incorporate daycare facilities for low income families.

Duration of the project: 5 years

Date of initiation: Immediate

National executing agency: Ministry of Finance

Description of activities and tasks:

- Identify existing suitable and structurally sound buildings in each community.
- Identify location/land for construction of new shelters/community centres.
- Refurbished and new construction of shelters/community centers.
- Purchasing of basic furniture and equipment.
- Evaluate the infrastructural needs to accommodate the expected number of persons needing shelters.

Expected results and products:

- Shelters/community centres constructed and equipped as shelters and for community development activities.
- Development of policy for management and maintainance of shelter/community centres.
- Capacity building and skills training programmes developed and implemented.
- Provision of safe and affordable child care facilities for low in come families.

<p>Total required investments: EC\$20,000,000.00</p> <ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs: <hr style="width: 20%; margin-left: 0;"/> <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding: 	
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Special remarks:

GRENADA		SOC-4																		
PROJECT TITLE: REHABILITATION OF SOCIAL SERVICE FACILITIES																				
Sector: SOCIAL		Sub-sector: Social and Human Development																		
Background: The Facilities used to provide safe places for the elderly, children and persons with disabilities and also child care suffered considerable damage; ranging from completely destruction to a range of structural damages including complete and partial roof loss. These homes were located in the parishes of St. Georges, St. Andrews, St. Marks, St Johns and St. Patricks and Carriacou. In the case of the day care centres seventy percent (70%) of the children affected are from single female headed household thus creating an additionally burden for these women.																				
Project objectives: <ul style="list-style-type: none"> Reconstruction and repair of existing structures, including reinforcement, in order to reduce vulnerability to natural disasters. To provide a place of care and protection for persons in need of special assistance. 																				
Duration of the project: 1 year Date of initiation: Immediate	National executing agency: Ministry of Social Development																			
Description of activities and tasks: Refurbish and construct damaged facilities and the procurement of material, equipment and furnishings damaged by the hurricane.																				
Expected results and products: <ul style="list-style-type: none"> Reparation of children's homes, Homes for the elderly and Home for persons with disabilities. Reparation of Day care Facilities. Replacement of materials, equipment and furnishings Reparation of libraries and sports facilities.																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right; padding: 5px;">Total required</td> <td style="text-align: left; padding: 5px;">investments:</td> </tr> <tr> <td style="text-align: right; padding: 5px;">EC\$4,000,000.00</td> <td></td> </tr> <tr> <td style="padding: 5px;"> <ul style="list-style-type: none"> Labour requirements (work/months) National inputs: Imported inputs: </td> <td></td> </tr> <tr> <td colspan="2" style="padding: 5px;"> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> </td> </tr> <tr> <td colspan="2" style="padding: 5px;">Financial requirements (dollars)</td> </tr> <tr> <td style="padding: 5px;"> <ul style="list-style-type: none"> Local: External: Donation/Loan/Funding: </td> <td></td> </tr> <tr> <td colspan="2" style="padding: 5px;"> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> </td> </tr> <tr> <td colspan="2" style="padding: 5px;">Potential source of financing</td> </tr> <tr> <td style="padding: 5px;"> <ul style="list-style-type: none"> External credit: Donor: </td> <td></td> </tr> </table>		Total required	investments:	EC\$4,000,000.00		<ul style="list-style-type: none"> Labour requirements (work/months) National inputs: Imported inputs: 		<hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/>		Financial requirements (dollars)		<ul style="list-style-type: none"> Local: External: Donation/Loan/Funding: 		<hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/>		Potential source of financing		<ul style="list-style-type: none"> External credit: Donor: 		Special remarks:
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Potential source of financing																				
<ul style="list-style-type: none"> External credit: Donor: 																				

GRENADA	SOC-11
PROJECT TITLE: REPLACEMENT OF ROOF AND REFURBISHMENT OF CARLTON HOUSE DRUG REHABILITATION CENTRE	

Sector: SOCIAL

Sub-sector: HEALTH

Background: Hurricane Ivan completely destroyed the roof, and significantly damaged the walls and internal structures of the Carlton House Drug Rehabilitation Centre.

Project objectives:

- The project aims to construct a new roof and repair the internal structures of the Drug Rehabilitation Centre to ensure a safe and comfortable environment of its clients.

Duration of the Project: 4 months
Date of initiation: 1st June 2005

National Executing Agency:
Ministry of Health and Ministry of Finance and Planning

Description of Activities and Tasks:

The project, which is estimated to last approximately four months, will involve the reconstruction of a new roof, and the repair of the walls and other internal structures of the drug rehabilitation centre.

Expected results and products:

The roof and infrastructure of the Carlton House Drug Rehabilitation Centre (CHDRC) will be reconstructed to allow for resumption of work at the centre.

Total required investments:
 US\$972,000

Special remarks:

Financial requirements (dollars)

- Local:
- External:
- Donation/grant:

Potential source of financing

- External credit:
- Donor:

GRENADA	SOC-12
PROJECT TITLE: STRENGTHENING OF COMMUNICABLE DISEASE SURVEILLANCE IN GRENADA, CARRIACOU, AND PETITE MARTINIQUE	

Sector: SOCIAL

Sub-sector: HEALTH

Background: Following the passage of hurricane Ivan, several cases of communicable diseases was suspected but not confirmed. The country lacked efficient communicable disease surveillance for reporting these conditions on time.

Project objectives:

- To prevent and control communicable diseases in Grenada, Carriacou, and Petite Martinique, by establishing an efficient surveillance system that can monitor these conditions, and are sufficiently flexible to respond to changing trends on time.

Duration of the Project: 1 year

Date of initiation: 1st October 2004

National executing agency: Ministry of Health and Ministry of Finance and Planning

Description of Activities and Tasks:

The surveillance system will be focused in the public hospitals, health centres and medical stations in the tri-island state. Designated nurses will report weekly to the national epidemiologist who will transmit the data weekly to Caribbean Epidemiology Centre (CAREC).

Expected results and products:

An efficient and up-to-date surveillance programme for communicable disease.

Total required investments:

US\$76,590.

Special remarks:

Financial requirements (dollars)

- Local:
- External:
- Donation/grant: _____

Potential source of financing

- External credit:
- Donor: _____

GRENADA	SOC-13
PROJECT TITLE: REPAIR OF ROOF OF CENTRAL MEDICAL STORES (CMS)	

Sector: SOCIAL

Sub-sector: HEALTH

Background: Hurricane Ivan completely destroyed the galvanize sheeting, and partially damaged the inner ceiling of the roof of CMS.

Project objectives:

- To replace the complete galvanize sheeting, and repair the ceiling of CMS.

Duration of the Project: 1 month
Date of initiation: 15th October 2004

National executing agency: Ministry of Health and Ministry of Finance and Planning

Description of Activities and Tasks:

Central Medical Stores is the government's main warehouse for storing pharmaceuticals and related medical supplies. The project seeks to restore the security and integrity of the medical products by repairing the roof over a 1-month period.

Expected results and products:

The roof of CMS will be repaired to provide full security, and to maintain the integrity of medical products.

Total required investments:

US\$648,148

Special remarks:

Financial requirements (dollars)

- Local:
- External:
- Donation/grant:

Potential source of financing

- External credit:
- Donor:

GRENADA

SOC-14

PROJECT TITLE: THE RECONSTRUCTION OF ROOFS ON THE LABORATORY AND OTHER DEPARTMENTS AT THE ST. GEORGE'S GENERAL HOSPITAL.

Sector: SOCIAL

Sub-sector: HEALTH

Background: Hurricane Ivan damaged the roof of several departments at the St. George's general hospital, including the laboratory, storeroom, kitchen, laundry, administrative office, and nursing and drivers offices.

Project objectives:

- To rebuilding the roof of the laboratory, and affected departments of the general hospital in order to restore critical diagnostic and other services to the population of Grenada.

Duration of the Project: 3 months
Date of initiation: 15th October 2004

National executing agency: Ministry of Health and Ministry of Finance and Planning

Description of Activities and Tasks:

The project aims to construct the roof of the medical laboratory as a priority, because it sustained the most damage within the hospital. In addition, the roofs of the surrounding buildings within the hospital compound will be repaired; these structures comprise the store room, generator room, kitchen, laundry, administrative office, and nursing and drivers offices.

Expected results and products:

The roof and supporting structures of the medical laboratory and other affected buildings will be repaired.

Total required investments:

US\$1,666,666

Special Remarks:

Financial requirements (dollars)

- Local:
- External:
- Donation/grant: _____

Potential source of financing

- External credit:
- Donor: _____

GRENADA

SOC-15

PROJECT TITLE: CONSTRUCTION OF ROOF OF RICHMOND HOME FOR THE ELDERLY

Sector: SOCIAL

Sub-sector: HEALTH

Background: The roof of the Richmond Hill Home for the Elderly was destroyed by hurricane Ivan, which caused further deterioration to the beds of the institution.

Project objectives:

- To replace the roof and beds which were destroyed by the hurricane, and to maximize the opportunity by purchasing important amenities for the institution.

Duration of the Project: 4 months
Date of initiation: 1st November 2004

National executing agency: Ministry of Health and Ministry of Finance

Description of Activities and Tasks:

The project aims to improve the building and infrastructure by replacing the roof and purchasing fifty (50) new beds and ten (10) wheel chairs to enhance the quality of life for the institution's residents. The home has a capacity of one hundred and ten (110) persons and provides care for the elderly and mentally and physically challenged persons.

Expected results and products:

The construction of the roof for the Richmond Hill home, equipped with 50 new beds and 10 additional wheel chairs.

Total required investments:
US\$194,444

Special remarks:

Financial requirements (dollars)

- Local:
- External:
- Donation/grant: _____

Potential source of financing

- External credit:
- Donor: _____

GRENADA

SOC- 16

PROJECT TITLE: REPLACEMENT OF ROOF AND REPAIR OF THE WATER CATCHMENT SYSTEM OF PRINCESS ROYAL HOSPITAL

Sector: SOCIAL

Sub-sector: HEALTH

Background: Hurricane Ivan damaged the roof and water catchment system of Princess Royal Hospital in Carriacou

Project objectives:

- The project aims to repair the roof of the hospital which is situated on the hill top and is therefore particularly vulnerable to strong winds. In addition, the water catchment system will be restored to good working condition to ensure that the hospital and its environs have a reliable supply to good quality water.

Duration of the Project: 1 month
Date of initiation: 15 October 2004

National executing agency: Ministry of Health, Social Security & the Environment

Description of Activities and Tasks:

The hospital roof and the water catchment system will be repair simultaneously.

Expected results and products:

The roof of the hospital and the water catchment system will be repaired.

Total required investments:

US\$37,037

Special remarks:

Financial requirements (dollars)

- Local: _____
- External:
- Donation/grant:

Potential source of financing

- External credit:
- Donor: _____

GRENADA

SOC-17

PROJECT TITLE: THE CONSTRUCTION OF ROOFS AND SUPPORTING STRUCTURES OF DAMAGED PRIMARY HEALTH CARE CENTRES

Sector: SOCIAL

Sub-sector: HEALTH

Background: Hurricane Ivan damaged or destroyed the roofs of several health centres. Important furniture and equipment were also damaged.

Project objectives:

- To repair the roofs and supporting structures of primary health care institutions to ensure a resumption of essential health services to catchment areas.

Duration of the Project: 6 months
Date of initiation: 15 November 2004

National executing agency: Ministry of Health and Ministry of Finance and Planning

Description of Activities and Tasks:

Replacement of damaged roof, doors, windows, furniture and equipment.

Expected results and products:

The primary health care institution restored to full working conditions by the replacement of roofs, relocated fixtures, and equipment

Total required investments:

USD\$218,518

Special remarks:

Financial requirements (dollars)

- Local:
- External: _____
- Donation/grant:
-

Potential source of financing

- External credit:
- Donor: _____

GRENADA

SOC- 18

PROJECT TITLE: REPLACEMENT OF ROOF, LABORATORY EQUIPMENT AND RABIES VACCINE AT THE VECTOR CONTROL BUILDING

Sector: SOCIAL

Sub-sector: HEALTH

Background: The hurricane destroyed the roof and equipment at the Vector Control building. The power outage at the building also destroyed the rabies vaccine.

Project objectives:

- The project aims to replace the roof, and purchase equipment to ensure that Vector borne diseases caused by mosquitoes, such as Dengue fever, are controlled. The Vector Control department will reestablish the vaccination programme against Rabies. These vector control programs are important to control the potential increase of the populations of mangoose and mosquitoes which tend to occur after hurricanes.

Duration of the Project: 3 months
Date of initiation: 1 January 2005

National executing agency: Ministry of Health and Ministry of Finance and Planning

Description of Activities and Tasks:

Construction of roof, procurement of equipment and rabies vaccine.

Expected results and products:

The roof of the Vector Control building will be repaired, and essential equipment and rabies vaccine procured.

Total required investments:
USD\$40,370

Special Remarks:

Financial requirements (dollars)

- Local:
- External:
- Donation/grant: _____

Potential source of financing

- External credit:
- Donor:

GRENADA	No.
PROJECT TITLE: Grenada Economic Recovery Intervention	
Sector: Manufacturing Sector	Subsector(s): Agro-processing, Furniture, Agro-tourism etc

Project objectives:

1. To accelerate the restoration process of the manufacturing facilities in Grenada, thus minimizing the loss in sales, export earnings and operating cash flow position of the companies.
2. To bring the companies to an operating efficiency level that is consistent to competitive standard in their respective industry.
3. To minimize the immigration of skilled people and entrepreneurs because of lack of income to maintain family, which could lead to re-training and recruitment of entire new workers. Thus, this could have an adverse impact on operating productivity.

Duration of the project: 3 months

Date of initiation: Immediate

National executing agency:

Organization of Eastern Caribbean States – Export Development Unit (OECS-EDU)

Description of activities and tasks:

To provide technical skills required for the refurbishment and restoration work necessary to bring manufacturing facilities in Grenada to a minimum acceptable operating condition. Immediate work is required in the re-instatement of electrical system, plumbing, refrigeration, cleaning, and re-calibration of plant equipment for the re-commissioning of the plants to full productive capacity. In recognizing the constraints in accessing national skills in the short term, this project will facilitate the recruitment of technicians from OECS companies with the necessary skills in fulfilling the project objectives. Companies will be approached to release the required staff as their contribution to the rehabilitation effort being undertaken. The project will provide for a projected 20 man-days per company and will meet the cost of travel, meals, accommodation and other incidental expenses.

Expected results and products:

- Restored plants operating efficiently
- Minimization in revenue and operating cash flow losses

Total required investments: US\$340,000.00

- **Labour requirements (work/months) :**
20 man-days per company
- **National inputs:**
To be Determined
- **Imported inputs:**
Technicians (as detailed in project)

Special remarks:

The estimated cost per company is US\$6,800.00 and this project focuses on 20 manufacturing companies in Grenada, thus a total cost of US\$340,000. This project cost does not include loss of raw and packaging inventory and operating inputs to restart the operations and building structural damages. It is anticipated that these are being attended to under different national programmes.

GRENADA	INFR-3
PROJECT TITLE: SECURITY OF WATER SUPPLIES	

Sector: INFRASTRUCTURE

Sub-sector: WATER

Background: As a result of Hurricane Ivan water supply across the island was greatly disrupted. This disruption was primarily from three phenomenon:

1. falling trees took down several sections of distribution pipelines, where these pipelines were supported on elevated columns;
2. Because of excessive silt, debris and trees in the dams located across the island, and because of their relatively remote locations, required clean up activities were hampered;
3. Lack of electrical supply to plants.

Project objectives:

- To reduce the vulnerability of this sector during natural disasters

Duration of the project: 1 year

Date of initiation: Immediate

National executing agency: Ministry of Works,
Ministry of Finance and NAWASA

Description of activities and tasks:

1. Distribution of pipelines and thrust blocks to be placed on or as close to the ground as possible;
2. Treatment plant supplied with stand by power;
3. Clearing of access road to dam and maintenance of shrubbery;

Expected results and products:

- Access to roads to dams maintained with a five meter range on each side of road;
- Maintenance of shrubbery adjacent to roads leading to dam;
- Regularly maintained standby power supply.

Total required investments: EC\$ 20 million

- Labour requirements
(work/months)
- National inputs:
- Imported inputs:

Financial requirements (dollars)

- Local:
- External:
- Donation/Loan/Funding:

Potential source of financing:

- Donor:

Special remarks:

GRENADA	INFR-2
PROJECT TITLE: ELECTRICAL SUPPLIES AND TELECOMMUNICATIONS	

Sector: INFRASTRUCTURE

Sub-sector: Electrical and Telecommunication

Background: During Hurricane Ivan several electrical utility poles were brought down across the island. This was perhaps most concentrated in St. Georges where the density of poles is related to the fact that this town is the main population centre for Grenada. As a result of the damage to these poles, telecommunications were also affected, as cable and wireless uses the electrical poles for carrying transmission cables.

Project objectives: To reduce the vulnerability of this sector to the effects of hurricane and other storms damage, it is being recommended that an underground system of cables be established in the main centres of St. Georges and Grenville.

Duration of the project: 24 months
Date of initiation: Immediate

National executing agency: Ministry of Works and Ministry of Finance

Description of activities and tasks:

- Develop a secure electricity and telecommunication service in the two main residential and commercial communities in Grenada.
- Ensure the uninterrupted supply of electrical and telecommunications service to government complexes.

Expected results and products:

Electrical and telecommunication service with increased protection from disruption in future natural disasters.

Total required investments: EC\$50,000,000.00
<ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs:
Financial requirements (dollars)
<ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding:
Potential source of financing
<ul style="list-style-type: none"> • External credit: • Donor:

Special remarks:

GRENADA		INFRA-4
PROJECT TITLE: SOUBISE- MARQUIS SEA DEFENSE WORKS		
Sector: INFRASTRUCTURE		Sub-sector: SEA DEFENCE
Background: The area of Soubise-Marquis is very prone to flooding from storm surge effects. During Hurricane Ivan, very serious and significant damage occurred to houses in the area as a result of storm surge and wave action.		
Project objectives: To reduce the vulnerability of the Soubise-Marquis community and to provide enhanced shelter for homes and for berthing of fishing vessels.		
Duration of the project: 24 months Date of initiation: Immediate	National executing agency: Ministry of Finance and Planning.	
Description of activities and tasks: Creation of a dyke/revetment. The construction of offshore breakwater to reduce storm wave action and to encourage the build-up of sand on the shoreline in the toe of these structures.		
<ul style="list-style-type: none"> • Expected results and products: It is expected that the vulnerability of this community will be reduced following these measures. 		
<div style="border: 1px solid black; padding: 10px;"> <p>Total required investments: EC\$5,000,000.00</p> <ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs: <hr style="width: 30%; margin-left: 0;"/> <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding: <hr style="width: 30%; margin-left: 0;"/> <p>Potential source of financing</p> <ul style="list-style-type: none"> • External credit: • Donor: </div>		Special remarks:

GRENADA		INFRA-5
PROJECT TITLE: RE-OPENING OF WESTERN MAIN ROAD AT SOUTHERN APPROACH TO GOUYAVE		
Sector: INFRASTRUCTURE	Sub-sector: ROADS	
Background: Due to a major landslide the western main road at the southern approach to Gouyave has been blocked. The landslide has revealed a potentially dangerous section of this essential roadway, where the likelihood of further slippage is high.		
Project objectives: To ensure the continued integrity of the western main road during all weather conditions.		
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Duration of the project: 6 months</div> <div style="border: 1px solid black; padding: 5px;">Date of initiation: Immediate</div>	<div style="border: 1px solid black; padding: 5px;">National executing agency: Ministry of Finance, Ministry of Works and the National Water and Sewerage Authority</div>	
<p>Description of activities and tasks: The project is aimed at investigating the most appropriate method of restoring use of this road. Two possible mitigation methods include:</p> <ul style="list-style-type: none"> Application of the slope stabilization techniques to the face of the slope, clearing the blocked roadway, and anchoring the toe of the slope. Relocation of the roadway to a lower level and protecting it by appropriately designed sea defense works. 		
<div style="border: 1px solid black; padding: 5px;">Expected results and products: Enhanced road safety.</div>		
<div style="border: 1px solid black; padding: 5px;"> <p>Total required investments: EC\$20,000,000.00</p> <ul style="list-style-type: none"> Labour requirements (work/months) National inputs: Imported inputs: <p style="text-align: center;">_____</p> <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> Local: External: Donation/Loan/Funding: <p style="text-align: center;">_____</p> <p>Potential source of financing</p> <ul style="list-style-type: none"> External credit: Donor: </div>		<p>Special remarks:</p>

ORGANISATION OF EASTERN CARIBBEAN STATES



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