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**BELIZE: ASSESSMENT OF THE DAMAGE CAUSED
BY HURRICANE KEITH, 2000**

*Annex: List of Project Profiles for the
reconstruction process*

This Annex contains the project profiles of the different sectors that have been identified as part of the reconstruction process. They supplement the information on project proposals that the Belize Government will present as part of its development and reconstruction process in order to face the consequences of Hurricane Keith. This document has not undergone formal editing.

SUMMARY LIST OF PROJECTS FOR RECONSTRUCTION

	Projects	Sector and subsector	Estimated costs	
			Bz\$	US\$
	Total		211,635,402	105,817,701
	Projects in social sectors		101,670,302	50,835,151
	Health and sanitation		5,382,000	2,691,000
1	Institutional Strengthening of the National Emergency Management Organization (NEMO)	Social sector, prevention and mitigation	300,000	150,000
2	Inter Ministerial Disaster Database Project	Social sector, prevention and mitigation	200,000	100,000
3	Restoration of laboratory capacity for blood safety and epidemiological surveillance a/	Health	550,000	275,000
4	Study of the construction of a new Central Medical Laboratory and Blood Bank	Health	40,000	20,000
5	Relocation and storage of medical supplies	Health	800,000	400,000
6	Mitigation measures to secure the function of the Karl Heusner Memorial Hospital against natural disasters	Health	500,000	250,000
7	Restoration of health facilities, supplies and equipment b/	Health	220,000	110,000
8	Monitoring of communicable diseases outbreak b/	Health	30,000	15,000
9	Intensified vector control Program b/	Health	342,000	171,000

	Projects	Sector and subsector	Estimated costs	
			Bz\$	US\$
10	Mental health/psycho-social rehabilitation	Health	200,000	100,000
11	Psycho-social rehabilitation for primary school age children	Health	200,000	100,000
12	Intensified public awareness on post disaster health issues b/	Health	54,000	27,000
13	Increased national disaster response capacity in health sector b/	Health	34,000	17,000
14	Increased national capacity for project planning, execution and follow up	Health	600,000	300,000
15	Strengthen woman's capacity for income generation activities in the post disaster phase	Social	50,000	25,000
16	Improved water quality, food safety and sanitation b/	Water and sanitation	172,000	86,000
17	Cleaning up of contaminated wells in rural areas	Water and sanitation	250,000	125,000
18	Reconstructing, cleaning and restoring latrines in rural areas	Water and sanitation	340,000	170,000
19	Collecting garbage and debris, and cleaning up residential areas	Water and sanitation	500,000	250,000
	Education		3,038,302	1,519,151
1	Rehabilitation of educational and recreational facilities	Education	3,038,302	1,519,151
	Housing		93,250,000	46,625,000
1	Shelters also serving as community centers in Ambergris and Caye Caulker	Housing	250,000	125,000

	Projects	Sector and subsector	Estimated costs	
			Bz\$	US\$
2	Repair and construction of houses	Housing	93,000,000	46,500,000
	Projects in infrastructure		68,088,500	34,044,250
	Energy, water supply, sanitation and telecommunications		12,805,100	6,402,600
1	San Pedro's energy system rehabilitation	Infrastructure, electricity	2,422,600	1,211,300
2	Caye Caulker's energy system rehabilitation	Infrastructure, electricity	2,023,800	1,011,900
3	Linkage of Caye Caulker to the Interconnected National System (INS)	Infrastructure, electricity	250,000	125,000
3	Orange Walk's water system rehabilitation	Infrastructure, water and sanitation	1,371,100	685,550
4	Corozal Town's water system rehabilitation	Infrastructure, water and sanitation	1,371,100	685,550
5	San Ignacio's water system rehabilitation	Infrastructure, water and sanitation	381,000	190,500
6	Water supply preventive capacity for evacuation Plan to Belmopan	Infrastructure, water and sanitation	135,500	67,750
6	San Pedro's telecommunication system rehabilitation	Infrastructure, telecommunication	2,910,000	1,455,000
7	Caye Caulker's telecommunication system rehabilitation	Infrastructure, telecommunication	1,940,000	970,000
	Transport subsector		33,480,000	16,740,000

	Projects	Sector and subsector	Estimated costs	
			Bz\$	US\$
1	Engineering studies for route AR2 northern highway section, mile 0,0 – mile 15,0	Transport, highways	288,000	144,000
2	Engineering studies for route AR1 western highway	Transport, highways	192,000	96,000
3	Reconstruction of route AR2 northern highway section, mile 0,0 – mile 15,0	Transport, highways	14,400,000	7,200,000
4	Reconstruction of route AR1 western highway section, mile 0,0 – mile 10,0	Transport, highways	9,600,000	4,800,000
5	Reconstruction of San Pedros's Airport Fence	Transport, airports	100,000	50,000
6	Port facilities at Ambergris Caye and other	Transport, ports	2,000,000	1,000,000
7	Maritime transportation supply	Transport, maritime	4,000,000	2,000,000
8	Hydrological studies for drainage and culvert design	Transport, highways	200,000	100,000
9	Geodesic study for heights determination	Transport, highways	700,000	350,000
10	Canalize and cleaning of culverts	Transport, highways	2,000,000	1,000,000
	Productive sectors		52,400,000	26,200,000
	Agriculture		51,400,000	25,700,000
1	Restoring the productive capacity of small-scale sugarcane farmers in the areas affected by hurricane Keith	Economic, agriculture	11,900,000	5,950,000
2	Restoration of productive capacity for food security commodities	Economic, agriculture	15,300,000	7,650,000

	Projects	Sector and subsector	Estimated costs	
			Bz\$	US\$
3	Post Keith restoration of the productive capacity of the small-scale commercial farmer for the export market	Economic, agriculture	8,500,000	4,250,000
4	Rehabilitation of fishing industry and restoration of marine ecosystems and World Heritage sites	Economic, fisheries	8,200,000	4,100,000
5	Forestry and agroforestry systems for disaster mitigation and sustainable development	Economic, agriculture and forestry	7,500,000	3,750,000
	Tourism		1,000,000	500,000
1	Strategy for strengthening sustainable tourism policies	Tourism	1,000,000	500,000
	Environmental management		11,180,000	5,590,000
1	Assessment of mangrove replanting programme at most vulnerable sites	Environment	120,000	60,000
2	Coral reef monitoring and assessment programme c/	Environment	0	0
3	Beach clean-up programme for beaches at Caye Caulker and at Ambergris Caye	Environment	1,060,000	530,000
4	Rehabilitation of the “split” at Caye Caulker	Environment	3,000,000	1,500,000
5	Repair and reforestation of eroded and vulnerable areas	Environment	2,000,000	1,000,000
6	Rehabilitation of archaeological sites and protected areas infrastructure damaged	Environment	500,000	250,000
7	Waste management in coastal areas (including economic instruments for waste management)	Environment	1,500,000	750,000

	Projects	Sector and subsector	Estimated costs	
			Bz\$	US\$
8	Formulation of land use management plans for the coastal area of Belize	Environment	1,000,000	500,000
9	Development of shelters for Ambergris Caye and Caye Caulker	Environment	2,000,000	1,000,000
1	Prevention and mitigation		100,000	50,000
	National meteorological network for local enhanced capacity			
	Development of early warning system and emergency management			

Source: ECLAC.

- a/ Funds have been approved from ECHO, 550,000 Bz\$.
- b/ Funds have been approved from DfID and OFDA/USA, 852,000 Bz\$.
- c/ Supported by the Global Environmental Facility. In Belize, the allocation of GEF funds to the Programme Conservation and Sustainable Use of the Barrier Reef Complex is US\$ 5,355,000.

BELIZE

No. SOCI-1

**PROJECT TITLE: INSTITUTIONAL STRENGTHENING OF THE NATIONAL EMERGENCY
MANAGEMENT ORGANIZATION (NEMO)**

Sector: SOCIAL SECTOR**Subsector:**

Background: Chronic natural disasters demonstrate the need for increased capacity at national, district and local levels in emergency preparedness and response.

Project objectives:

- Increase disaster management response capacity at all levels

Duration of the project: one year

Date of initiation:

National executing agency: NEMO

Description of activities and tasks:

- Conduct evaluation of current response capacity and make recommendations on how to strengthen capacity at all levels.
- Develop a national plan to implement recommendations

Expected results and products:

Establishment of local emergency management committees.

Increased participation of civil society.

Total required investments: BD 300,000

- 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:

UN Agencies have indicated willingness to coordinate this activity.

BELIZE	No. SOCI-2
PROJECT TITLE: INTER MINISTERIAL DISASTER DATABASE PROJECT	
Sector: SOCIAL SECTOR	Subsector:
<p>Background: The efficient and effective planning and management of disaster preparedness and response activities requires that community and national organizations have accurate and reliable data. This data needs to be systematized and easily accessible to those engaged in planning and management efforts.</p>	

Project objectives:

- Strengthen the Social Indicators Committee
- Strengthen the capacity of Ministries, Local Government Bodies and relevant civil society organizations to gather and analyse data related to disaster preparedness and management

<p>Duration of the project: 12 months</p> <hr/> <p>Date of initiation: Immediate</p>	<p>National executing agency: Ministry of Finance/Central Statistics Office, Ministry of Human Development, Women and Civil Society.</p>
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Description of activities and tasks:

- Training
- Public Education
- Social Mobilization
- Equipment

<p>Expected results and products: Publication of key surveys and studies, inter- ministerial disaster database system, inter-ministerial coordination</p>
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<p>Total required investments:</p> <ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs: _____ <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding _____ <p>Potential source of financing</p> <p>External credit:</p> <p>Donor:</p>	200,000
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Special remarks: UNICEF/Belize has expressed a commitment to collaborate on this project.

BELIZE

No. SOCI-3

**PROJECT TITLE: RESTORATION OF LABORATORY CAPACITY FOR BLOOD SAFETY AND
EPIDEMIOLOGICAL SURVEILLANCE**

Sector: HEALTH**Subsector:**

Background: At the Central Medical Laboratory and blood Bank, the only one in the country, laboratory and office equipment were damaged, reagents and supplies were lost and ceiling, roof, floor and workstations were damaged.

Project objectives: To secure safe blood for transfusions and essential laboratory services.

Duration of the project: 6 months

Date of initiation: Immediate

National executing agency: Ministry of Health

Description of activities and tasks: Purchasing of equipment and reagents and contracting of services for repair of laboratory infra structure.

Expected results and products: restored laboratory capacity.

Total required investments:

550,000

- 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: The project will be developed in cooperation with PAHO.

Funds have been approved from ECHO.

BELIZE

No. SOCI-4

PROJECT TITLE: STUDY OF THE CONSTRUCTION OF NEW CENTRAL MEDICAL LABORATORY AND BLOOD BANK

Sector: HEALTH**Subsector:**

Background: : At the Central Medical Laboratory and blood Bank, laboratory and office equipment were damaged, reagents and supplies were lost and ceiling, roof, floor and workstations were damaged.

To permanently secure the functioning of the laboratory and the blood bank, a new construction in a more safe place is probably necessary.

Project objectives: To provide information for a decision about the construction of a new laboratory and blood bank.

Duration of the project: 6 months

Date of initiation: Immediate

National executing agency: Ministry of Health

Description of activities and tasks: Contracting of a short term consultant

Expected results and products: Report

Total required investments:

40,000

- 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:

BELIZE	No. SOCI-5
PROJECT TITLE: RELOCATION AND STORAGE OF MEDICAL SUPPLIES	

Sector: HEALTH	Subsector:
Background: All medical supplies were evacuated to Belmopan in containers due to the high vulnerability of the existing storage unit, located immediately at the seashore. The building is part of the old hospital and in bad condition.	

Project objectives: Provide safe storage for medical supplies and equipment

Duration of the project: 24 months Date of initiation: Immediate	National executing agency: Ministry of Health
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Description of activities and tasks: Finding a suitable building that can be rented or contracting of services for the construction of a new medical store building.

Expected results and products: the creation of a suitable place for storage of medical supplies.

Total required investments: <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 External credit: Donor:	800,000
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Special remarks: Land in Belmopan for construction has already been assigned by the GoB. The new construction will also serve as shelter for MoH staff.

BELIZE	No. SOCI-6
PROJECT TITLE: MITIGATION MEASURES TO SECURE THE FUNCTION OF THE KARL HEUSNER MEMORIAL HOSPITAL AGAINST NATURAL DISASTERS	

Sector: HEALTH	Subsector:
Background: the hospital remained functional during the hurricane although a large amount of water entered the building through the roof, windows, doors and through the floor. A rehabilitation project funded by EU and the GoB is planned. The mitigation measures are urgently awaiting the planned rehabilitation project.	

Project objectives: To secure vital functions of the hospital.

Duration of the project: 6 months Date of initiation: Immediate	National executing agency: Ministry of Health
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Description of activities and tasks: Purchasing of equipment and construction material and contracting of services to restore leaking roof, windows and doors, and water electricity and medical gases systems.

Expected results and products: Water will not enter the building during heavy rains and storms and departments for accident and emergency, operating, maternity, pharmacy and some wards will have secured function during natural disasters.
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Total required investments:	500,000
<ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs: _____ 	
Financial requirements (dollars)	
<ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding _____ 	
Potential source of financing	
External credit:	
Donor:	

Special remarks: . A rehabilitation project funded by EU and the GoB is planned.

BELIZE	No. SOCI-7
PROJECT TITLE: RESTORATION OF HEALTH FACILITIES, SUPPLIES AND EQUIPMENT	
Sector: HEALTH	Subsector:
Background: Several health clinics was damaged by the hurricane and five of them lost their three months medical supplies and basic equipment.	

Project objectives: Restored capacity including supplies and equipment for 5 health facilities.

Duration of the project: 6 months Date of initiation: Immediate	National executing agency: Ministry of Health
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Description of activities and tasks: Purchase of generators, basic medical supplies, equipment and material for the refurbishing of damaged health centers.

Expected results and products: Emergency repairs conducted and basic equipment and supplies replaced.
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<p>Total required investments: 220,000</p> <ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs: _____ <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding _____ <p>Potential source of financing</p> <p>External credit:</p> <p>Donor:</p>	<p>Special remarks: : The project will be developed in cooperation with PAHO.</p> <p>Funds have been approved from Dfid and OFDA/USA.</p>
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BELIZE	No. SOCI-8
PROJECT TITLE: MONITORING OF COMMUNICABLE DISEASES OUTBREAK	
Sector: HEALTH	Subsector:
<p>Background: The islands and four districts were completely flooded, washing dumpsites, sewer, lagoons and excreta from latrines and septic tanks into residential areas, mixing with debris from destroyed houses. Chemical contamination from the dumpsites, chemical storage areas and gas stations also occurred in certain areas.</p>	

Project objectives: Eliminate or reduce outbreak of communicable diseases

Duration of the project: 6 months <hr/> Date of initiation: Immediate	National executing agency: Ministry of Health
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Description of activities and tasks: contract of short term consultant (epidemiologist), revision of surveillance protocols, training of staff and logistic support to field visits.

<p>Expected results and products: Surveillance reports produced and provided to health authorities and every eventual outbreak investigated, documented and controlled.</p>
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<p>Total required investments: 30,000</p> <ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs: _____ <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding _____ <p>Potential source of financing</p> <p>External credit:</p> <p>Donor:</p>	<p>Special remarks: The project will be developed in cooperation with PAHO.</p> <p>Funds have been approved from DfID and OFDA/USA.</p>
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BELIZE	No. SOCI-9
PROJECT TITLE: INTENSIFIED VECTOR CONTROL PROGRAM	

Sector: HEALTH	Subsector:
<p>Background: The islands and four districts were completely flooded, washing dumpsites, sewer, lagoons and excreta from latrines and septic tanks into residential areas, mixing with debris from destroyed houses. Chemical contamination from the dumpsites, chemical storage areas and gas stations also occurred in certain areas.</p>	

Project objectives: Reduced water and vector borne diseases

<p>Duration of the project: 6 months Date of initiation: Immediate</p>	<p>National executing agency: Ministry of Health</p>
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Description of activities and tasks: Purchase of spraying equipment, insecticides, logistic support to the vector controls and training of staff.

<p>Expected results and products: Increased spraying cycles and two clean up campaigns conducted.</p>
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<p>Total required investments:</p> <ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs: _____ <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding _____ <p>Potential source of financing</p> <p>External credit:</p> <p>Donor:</p>	<p>342,000</p>
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Special remarks: The project will be developed in cooperation with PAHO. Funds have been approved from DfID and OFDA/USA.

BELIZE	No. SOCI-10
PROJECT TITLE: MENTAL HEALTH/PSYCHO-SOCIAL REHABILITATION	

Sector: HEALTH

Subsector:

<p>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.</p>
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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.

<p>Duration of the project: 12 months Date of initiation: 12/2000</p>	<p>National executing agency: Ministry of Health</p>
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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
- Skill-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 mental health component in the current disaster management profile by incorporating the Stress-Management In Disasters (SMID) Committee into NEMO
- Develop SMID in conjunction with NEMO

<p>Expected results and products: Situational diagnosis, increased awareness of crisis reactions, increased coping skills, and decreased risk for mental illness.</p>
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Total required investments: BD 200,000

- 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:

BELIZE	No. SOCI-11
PROJECT TITLE: PSYCHO-SOCIAL REHABILITATION FOR PRIMARY SCHOOL AGE CHILDREN	

Sector: PSYCHO-SOCIAL REHABILITATION	Subsector:
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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.

Project objectives:

- Develop a cadre of trained teachers, caregivers and parents
- Integrate psycho-social rehabilitation of children into the curriculum as well as into the community and parent empowerment program (COMPAR).
- Create public awareness on the psycho-social impact of disasters on children

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

National executing agency: Ministry of Human Development, Women and Civil Society and the Ministry of Education
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Description of activities and tasks:

- Develop training materials, train teachers nation-wide and especially in vulnerable areas (i.e. San Pedro, Caye Clauker)
- Develop and produce public service announcements
- Train teachers, school administrators and caregivers in psycho-social trauma and rehabilitation
- Sensitize parents and community leaders

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 • Tv, radio spots and programs • Workshops at national and district levels

Total required investments: BD 200, 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: • External: • Donation/Loan/Funding _____
Potential source of financing
External credit:
Donor:

Special remarks:

BELIZE	No. SOCI-12
PROJECT TITLE: INTENSIFIED PUBLIC AWARENESS ON POST DISASTER HEALTH ISSUES	

Sector: HEALTH	Subsector:
<p>Background: The islands and four districts were completely flooded, resulting in dumpsites, sewer, lagoons and excreta from latrines and septic tanks washing into residential areas, mixing with debris from destroyed houses. Chemical contamination from the dumpsites, chemical storage areas and gas stations also occurred in certain areas.</p>	

Project objectives: Public awareness on good hygiene standards will be increased.

<p>Duration of the project: 6 months Date of initiation: Immediate</p>	<p>National executing agency: Ministry of Health</p>
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Description of activities and tasks: reproduction of educational materials, airing of radio and TV spots, contracting of short-term consultant and training of community leaders.

<p>Expected results and products: educational material and messages will be delivered to the Belize population and community leaders will be trained.</p>
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<p>Total required investments: 54,000</p> <ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs: _____ <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding _____ <p>Potential source of financing</p> <p>External credit:</p> <p>Donor:</p>	<p>Special remarks: The project will be developed in cooperation with PAHO.</p> <p>Funds have been approved from DfID and OFDA/USA.</p>
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BELIZE	No. SOCI-13
PROJECT TITLE: INCREASED NATIONAL DISASTER RESPONSE CAPACITY IN HEALTH SECTOR	

Sector: HEALTH**Subsector:**

Background: The disaster demonstrated the importance of updated emergency plans and systems together with trained staff to deal with the emergency preparedness phase, the acute phase and the post-disaster situation.

Project objectives: Increased national disaster response capacity in the health sector.

Duration of the project: 6 months Date of initiation: Immediate	National executing agency: Ministry of Health
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Description of activities and tasks: National workshop, update of health sector contingency plan, training and logistic support for implementation.

Expected results and products: Experiences will be evaluated and documented, staff trained and preparedness plan implemented.
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<p>Total required investments: 34,000</p> <ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs: _____ <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding _____ <p>Potential source of financing</p> <p>External credit:</p> <p>Donor:</p>	<p>Special remarks: The project will be developed in cooperation with PAHO.</p> <p>Funds have been approved from DfID and OFDA/USA.</p>
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BELIZE	No. SOCI-14
PROJECT TITLE: INCREASED NATIONAL CAPACITY FOR PROJECT PLANNING, EXECUTION AND FOLLOW UP	

Sector: HEALTH

Subsector:

Background: In the post disaster period, many projects are supposed to be executed by the Ministry of Health to restore the function of the health system and to take measures to be prepared for the next disaster. The number of qualified staff and the planning capacity of the Ministry of Health needs to be strengthened in order to be able to execute proposed projects and plan for sustainable health programs, less vulnerable to future disasters.

Project objectives: Increased project and program planning and execution capacity of Ministry of Health.

Duration of the project: 24 months Date of initiation: Immediate	National executing agency: Ministry of Health
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Description of activities and tasks: Training activities and development of required skills, either through national or international courses or contracting of short term consultants for national training seminars.

Expected results and products: Capacity developed for planning and execution of programs and projects.

Total required investments:	600,000
<ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs: _____ 	
Financial requirements (dollars)	
<ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding _____ 	
Potential source of financing	
External credit:	
Donor:	

Special remarks: The project will be developed in cooperation with PAHO.

BELIZE	No. SOCI-15
PROJECT TITLE: STRENGTHEN WOMEN'S CAPACITY FOR INCOME GENERATION ACTIVITIES IN THE POST DISASTER PHASE	

Sector: SOCIAL SECTOR

Subsector:

Background: The disaster demonstrated the vulnerability of poor people, living in areas and in houses unsuitable for withstanding the natural forces of a tropical storm. Many of the households are female headed. Income generation activities are needed to reduce vulnerability and create opportunities allowing the women themselves to improve their situation. Short-term activities can be linked to the clean up and restoration of residential areas after the storm.

Project objectives: Reduce economic vulnerability of poor women.

<p>Duration of the project: 24 months Date of initiation: Immediate</p>	<p>National executing agency: Ministry of Human Development</p>
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Description of activities and tasks: Short-term consultant, training and capacity development activities for women.

<p>Expected results and products: Increased capacity of women to engage in income generation activities.</p>

<p>Total required investments: 50,000</p> <ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs: _____ <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding _____ <p>Potential source of financing</p> <p>External credit:</p> <p>Donor:</p>	<p>Special remarks:</p>
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BELIZE	No. SOCI-16
PROJECT TITLE: IMPROVED WATER QUALITY, FOOD SAFETY AND SANITATION	

Sector: WATER AND SANITATION

Subsector:

Background: The islands and four districts were completely flooded, resulting in dumpsites, sewer, lagoons and excreta from latrines and septic tanks washed into residential areas, mixing with debris from destroyed houses. Chemical contamination from the dumpsites, chemical storage areas and gas stations also occurred in certain areas.

Project objectives: Improved environment and conditions for personal hygiene

Duration of the project: 6 months Date of initiation: Immediate	National executing agency: Ministry of Health
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Description of activities and tasks: Purchase of testing equipment, reagents, water storage tanks, contracting of services to repair community sanitary facilities, and training of staff.

<p>Expected results and products: Water sources will be tested and contaminated sources treated. Water storage will be provided and sanitary facilities will be restored. Food processing facilities will be inspected.</p>
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<p>Total required investments:</p> <ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs: _____ <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding _____ <p>Potential source of financing</p> <p>External credit:</p> <p>Donor:</p>	<p>172,000</p>
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Special remarks: The project will be developed in cooperation with PAHO.

Funds have been approved from DfID and OFDA/USA.

BELIZE	No. SOCI-17
PROJECT TITLE: CLEANING UP OF CONTAMINATED WELLS IN RURAL AREAS	

Sector: WATER AND SANITATION

Subsector:

Background: The islands and four districts were completely flooded, resulting in dumpsites, sewer, lagoons and excreta from latrines and septic tanks washed into residential areas, mixing with debris from destroyed houses. Chemical contamination from the dumpsites, chemical storage areas and gas stations also occurred in certain areas. An estimated 500 wells in rural areas was contaminated or damaged.

Project objectives: Reduce health risks due to unhealthy and dangerous environment in residential areas.

<p>Duration of the project: 12 months</p> <p>Date of initiation: Immediate</p>	<p>National executing agency: Ministry of Public Works</p>
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Description of activities and tasks: Contracting of services for emptying and repairing approximately 500 contaminated and damaged wells in rural areas

<p>Expected results and products: Clean and safe water from the wells</p>
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<p>Total required investments: 250,000</p> <ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs: _____ <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding _____ <p>Potential source of financing</p> <p>External credit:</p> <p>Donor:</p>	<p>Special remarks:</p>
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BELIZE	No. SOCI-18
PROJECT TITLE: RECONSTRUCTING, CLEANING AND RESTORING LATRINES IN RURAL AREAS	

Sector: WATER AND SANITATION

Subsector:

Background: The islands and four districts were completely flooded, resulting in dumpsites, sewer, lagoons and excreta from latrines and septic tanks washed into residential areas, mixing with debris from destroyed houses. Chemical contamination from the dumpsites, chemical storage areas and gas stations also occurred in certain areas.

Project objectives: Reduce health risks due to unhealthy and dangerous environment in residential areas.

<p>Duration of the project: 12 months</p> <p>Date of initiation: Immediate</p>	<p>National executing agency: Ministry of Public Works</p>
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Description of activities and tasks: Contracting of services and purchasing of material for reconstruction of approximately 400 latrines and cleaning up and restoring approximately 800 latrines, all in rural areas.

<p>Expected results and products: Functioning latrines</p>

<p>Total required investments: 340,000</p> <ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs: _____ <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding _____ <p>Potential source of financing</p> <p>External credit:</p> <p>Donor:</p>	<p>Special remarks:</p>
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BELIZE	No. SOCI-19
PROJECT TITLE: COLLECTING GARBAGE AND DEBRIS, AND CLEANING UP RESIDENTIAL AREAS	

Sector: WATER AND SANITATION

Subsector:

Background: The islands and four districts were completely flooded, resulting in dumpsites, sewer, lagoons and excreta from latrines and septic tanks washed into residential areas, mixing with debris from destroyed houses. Chemical contamination from the dumpsites, chemical storage areas and gas stations also occurred in certain areas.

Project objectives: Reduce health risks due to unhealthy and dangerous environment in residential areas.

<p>Duration of the project: 6 months</p> <p>Date of initiation: Immediate</p>	<p>National executing agency: Ministry of Public Works</p>
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Description of activities and tasks: Contracting of services for cleaning up of residential areas, collecting and destruction of garbage. Hiring local men and women for the work.

<p>Expected results and products: Elimination of garbage and material from washing dumpsites, sewer, lagoons and excreta from latrines and septic tanks into residential areas, mixing with debris from destroyed houses.</p>
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<table> <tr> <td>Total required investments:</td> <td style="text-align: right;">500,000</td> </tr> <tr> <td>• Labour requirements (work/months)</td> <td style="text-align: right;">200</td> </tr> <tr> <td>• National inputs:</td> <td style="text-align: right;">200</td> </tr> <tr> <td>• Imported inputs:</td> <td style="text-align: right;">0</td> </tr> <tr> <td>Financial requirements (dollars)</td> <td></td> </tr> <tr> <td>• Local:</td> <td style="text-align: right;">50,000</td> </tr> <tr> <td>• External:</td> <td style="text-align: right;">450,000</td> </tr> <tr> <td>• Donation/Loan/Funding</td> <td style="text-align: right;">450,000</td> </tr> <tr> <td>Potential source of financing</td> <td></td> </tr> <tr> <td>External credit:</td> <td></td> </tr> <tr> <td>Donor:</td> <td></td> </tr> </table>	Total required investments:	500,000	• Labour requirements (work/months)	200	• National inputs:	200	• Imported inputs:	0	Financial requirements (dollars)		• Local:	50,000	• External:	450,000	• Donation/Loan/Funding	450,000	Potential source of financing		External credit:		Donor:		<p>Special remarks:</p>
Total required investments:	500,000																						
• Labour requirements (work/months)	200																						
• National inputs:	200																						
• Imported inputs:	0																						
Financial requirements (dollars)																							
• Local:	50,000																						
• External:	450,000																						
• Donation/Loan/Funding	450,000																						
Potential source of financing																							
External credit:																							
Donor:																							

BELIZE	No. EDU-1
PROJECT TITLE: REHABILITATION OF EDUCATIONAL AND RECREATIONAL FACILITIES	

Sector: EDUCATION**Subsector:**

Background: The education sector suffered considerable damage. Schools in Belize District, particularly the Cayes and Belize City suffered the most damage to roofs and structures due to flooding. 51 schools, 33 at the primary and 18 at the secondary level were affected. Over 2,000 children missed school for at least two and a half weeks. Schools also suffered damages as they were used as shelters.

Project objectives:

- Reconstruction and repair of existing structures, including reinforcement, in order to reduce vulnerability to natural disasters.

Duration of the project: one year
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Date of initiation:

National executing agency: Ministry of Education

Description of activities and tasks:

- Reparation of Schools
- Replacement of school materials, equipment and furnishings
- Reparation of libraries and sports facilities

Expected results and products: Preventive: fewer damages to be foreseen from the next hurricane season; fewer children missing school.

Rehabilitation: school buildings will be better equipped to withstand a natural disaster.

Total required investments:	3,038,000
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Special remarks:

- Labour requirements
(work/months)

- National inputs:

- Imported inputs: _____

Financial requirements (dollars)

- Local:

- External:

- Donation/Loan/Funding _____

Potential source of financing

External credit:

Donor:

BELIZE	No. HAB-1
PROJECT TITLE: SHELTERS ALSO SERVING AS COMMUNITY CENTERS IN AMBERGRIS AND CAYE CAULKER	

Sector: HOUSING

Subsector:

Background: The disaster demonstrated the vulnerability of poor people, living in areas and in houses unsuitable for withstanding the natural forces of a tropical storm. In the islands of Ambergris and Caye Caulker there were no buildings suitable for shelters. The new constructions in these two islands will provide shelters in case of tropical storms, and they will also be used for community activities, training and capacity building activities for the population in the poor areas of San Pedro ("San Pedrito") and Caye Caulker.

Project objectives: Create shelter for vulnerable parts of the population that will also serve as centres for community development.

Duration of the project: 12 months Date of initiation: Immediate	National executing agency: Ministry of Public Works
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Description of activities and tasks: Construction of 2 shelters/Community Centers, purchase of basic furniture and equipment, identifying local leaders, capacity building and promoting local management of the shelters/community Centers and the use of them for training activities and community development proposed in other projects.

Expected results and products: Shelters constructed and equipped, and organization for local management of the centres.
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<p>Total required investments: 250,000</p> <ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs: _____ <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding _____ <p>Potential source of financing</p> <p>External credit:</p> <p>Donor:</p>	Special remarks:
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BELIZE	No. HAB-2
PROJECT TITLE: REPAIR AND CONSTRUCTION OF HOUSES	

Sector: HOUSING

Subsector:

Background: Many houses have been either totally destroyed or suffered complete or partial roof damage, particularly in the coastal areas or were damaged as a result of the flooding. An estimated 3000 houses need complete replacement. The most affected districts are Belize (San Pedro and Caye Caulker) and Orange Walk.

Lack of building materials and the lack of a plan that could provide alternatives for securing financial assistance have been barriers for the reconstruction of houses in the period following the disaster.

Project objectives: Safe houses provided to affected population.

Duration of the project: 24 months

Date of initiation: Immediate

National executing agency: Ministry of Public Works

Description of activities and tasks: Contracting of services and construction or repair of destroyed and damaged houses.

Expected results and products: Houses repaired and constructed with increased protection for future natural disaster.

<p>Total required investments: 93,000,000</p> <ul style="list-style-type: none"> • Labour requirements (work/months) • National inputs: • Imported inputs: _____ <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: • External: • Donation/Loan/Funding _____ <p>Potential source of financing</p> <p>External credit:</p> <p>Donor:</p>	<p>Special remarks:</p>
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BELIZE	No. ELEC-1
PROJECT TITLE: SAN PEDRO'S ENERGY SYSTEM REHABILITATION	

Sector: INFRASTRUCTURE

Subsector: ELECTRICITY

Background: The passage of Hurricane Keith resulted in excessive rainfall in the north and wind affecting mainly the eastern part of the country. The electrical system was affected as a whole, but in particular the transmission and distribution lines suffered cuts and loss of poles. Some damages affected the generating system also. The most affected area is concentrated in the island of San Pedro and Caye Caulker's village. In San Pedro the entire main and secondary distribution lines were affected in some way and many poles fell down or broken affecting 9.4% of the 34.5 kV transmission lines; 43.2% of the main and 32.7% of the secondary distribution network. The total generation capacity was also severely affected. The damages on the network were caused by the extreme winds and flooding, while the damage in the power stations was due to the excessive rain and flooding. The metering infrastructure was also partially damaged.

Project objectives: To restore the energy infrastructure in order to provide energy to all the inhabitants in San Pedro and to bill the real energy consumption.

Duration of the project: 4 months

Date of initiation: Immediately

National executing agency: Belize Electricity Limited (BEL)

Description of activities and tasks:

- To repair all damages of the affected main and secondary distribution lines
- To replace all the poles fell down or broken on approximately 9.4% of the transmission lines, 43.2% of the main ones and 32.7% of the secondary distribution network
- To repair/replace the damaged equipment in the control room and power station and to replace the damaged meters.

Expected results and products: To recover the domestic, commercial, tourist and all economic activities in town as before the hurricane.

Total required investments : (BZ\$ thousand)	2,422.6
• Labour requirements (BZ\$ thousand)	424.9
• National inputs:	424.9
• Imported inputs: _____	1,997.7
Financial requirements (dollars)	
• Local:	726.8
• External:	1,695.8
• Donation/Loan/Funding _____	
Potential source of financing	
External credit: IDB/CDB	
Donor:	

Special remarks: The project is already in progress.

BELIZE	No. ELEC-2
PROJECT TITLE: CAYE CAULKER'S ENERGY SYSTEM REHABILITATION	

Sector: INFRASTRUCTURE

Subsector: ELECTRICITY

Background: The passage of Hurricane Keith resulted in excessive rainfall in the north and wind affecting mainly the eastern part of the country. The electrical system was affected as a whole, but in particular the transmission and distribution lines suffered cuts and loss of poles. The generating system also suffers some damages. The most affected area is concentrated in the island of San Pedro and Caye Caulker's village. In Caye Caulker the entire main and secondary distribution lines were affected in a worse way and the damages caused by poles fell down were more severe, affecting 73% of the main and 42% of the secondary distribution networks respectively.. The power station also suffer intensive damages. The damages on the network were caused by the extreme winds and flooding, while the damage in the power stations was due to the excessive rain and flooding. The metering infrastructure was also intensive damaged.

Project objectives: To restore the energy infrastructure in order to provide energy to all the inhabitants in Caye Caulker and to bill the real energy consumption.

Duration of the project: 4 months

Date of initiation: Immediately

National executing agency: Belize Electricity Limited (BEL)

Description of activities and tasks:

- To repair all damages of the affected main and secondary distribution lines
- To replace all the poles fell down or broken on 73% of the main and 42% of the secondary distribution networks respectively
- To repair/replace the damaged generator set and to replace the damaged meters.

Expected results and products: To recover the domestic, commercial, tourist and all economic activities in village as was before the hurricane.

Total required investments:	2,023.8
(BZ\$ thousand)	
• Labour requirements	355.0.
(BZ\$ thousand)	
• National inputs:	355.0
• Imported inputs:	1,688.8
Financial requirements (dollars)	
• Local:	607.1
• External:	1,416.7
• <u>Donation/Loan/Funding</u>	
Potential source of financing	
External credit: IDB/CDB	
Donor:	

Special remarks: The project is already in progress.

BELIZE	No. ELEC-3
PROJECT TITLE: LINKAGE OF CAYE CAULKER TO THE INTERCONNECTED NATIONAL SYSTEM (INS)	

Sector: INFRASTRUCTURE

Subsector: ELECTRICITY

Background: The passage of Hurricane Keith resulted in excessive rainfall in the north and wind affecting mainly the eastern part of the country. The electrical system was affected as a whole, but in particular the transmission and distribution lines suffered cuts and loss of poles. The generating system also suffers damages, specially in Caye Caulker, where the power station was severe affected and there are not other source of energy to provide the inhabitants energy needs.

Project objectives: To perform a feasibility study in order to provide energy to Caye Caulker from the Interconnected National System (INS).

Duration of the project: 6 months

Date of initiation: January 2001

National executing agency: BEL

Description of activities and tasks: To perform technical and economical investigation in order to demonstrate the feasibility to interconnect Caye Caulker to INS through San Pedro interconnection link and to define a project profile of such link in order to negotiate funds to build it.

Expected results and products: To demonstrate the technical and economic feasibility of a submarine interconnection between San Pedro and Caye Caulker

Total required investments:	250.00
(BZ\$thousands)	
• Labour requirements (work/months)	
• National inputs:	
• Imported inputs:	250.00
Financial requirements (dollars)	250.00
• Local:	
• External:	250.00
• Donation/Loan/Funding	250.00
Potential source of financing	
External credit:	
Donor:	

Special remarks:

BELIZE

No. WS-1

PROJECT TITLE: ORANGE WALK'S WATER SYSTEM REHABILITATION**Sector: INFRASTRUCTURE****Subsector: WATER AND SANITATION**

Background: Most damage to drinking water and sewerage systems is in the municipalities worst affected by the hurricane. The short-term aims of the institutions involved are to re-establish damaged drinking water and sewerage systems, and to carry out actions to prevent and reduce the risk of epidemics in affected areas; in the medium term, actions will focus on the total reconstruction and repair of damaged systems. In Orange Walk City an overhead storage tank damaged because of the stress force of the winds. This storage tank has more than 20 years in operation.

Project objectives: To replace the affected storage capacity including a new design to consider some improvement in order to reduce vulnerability.

Duration of the project: 4 months**Date of initiation:** Immediately**National executing agency:** Water and Sewerage Authority (WASA)

Description of activities and tasks: To design, to build and to install a new tank of the same capacity as the collapsed tank is.

Expected results and products: To recover the storage capacity in town in order to have no problems with the water supply to the inhabitants.

Total required investments:	1,371.1
(BZ\$ thousand)	
• Labour requirements	205.7
(work/months)	
• National inputs:	205.7
• Imported inputs:	1,165.4
Financial requirements (dollars)	
• Local:	411.3
• External:	959.8
• <u>Donation/Loan/Funding</u>	
Potential source of financing	
External credit: IDB/CDB	
Donor:	

Special remarks:

BELIZE	No. WS-2
PROJECT TITLE: COROZAL TOWN'S WATER SYSTEM REHABILITATION	

Sector: INFRASTRUCTURE

Subsector: WATER AND SANITATION

Background: Most damage to drinking water and sewerage systems is in the municipalities worst affected by the hurricane. The short-term aims of the institutions involved are to re-establish damaged drinking water and sewerage systems, and to carry out actions to prevent and reduce the risk of epidemics in affected areas; in the medium term, actions will focus on the total reconstruction and repair of damaged systems. In Corozal City an overhead storage tank damaged because of the stress force of the winds. This storage tank has more than 20 years in operation.

Project objectives: To replace the affected storage capacity including a new design to consider some improvement in order to reduce vulnerability.

<p>Duration of the project: 4 months</p> <p>Date of initiation: Immediately</p>	<p>National executing agency: Water and Sewerage Authority (WASA)</p>
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Description of activities and tasks: To design, to build and to install a new tank of the same capacity as the collapsed tank is.

<p>Expected results and products: To recover the storage capacity in town in order to have no problems with the water supply to the inhabitants.</p>

<p>Total required investments:</p> <p>(BZ\$ thousand)</p> <ul style="list-style-type: none"> • Labour requirements (work/months) 205.7 • National inputs: 205.7 • Imported inputs: 1165.4 <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: 411.3 • External: 959.8 • Donation/Loan/Funding _____ <p>Potential source of financing</p> <p>External credit: IDB/CDB</p> <p>Donor:</p>	<p>Special remarks:</p>
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BELIZE	No. WS-3
PROJECT TITLE: SAN IGNACIO'S WATER SYSTEM REHABILITATION	

Sector: INFRASTRUCTURE

Subsector: WATER AND SANITATION

Background: Most damage to drinking water and sewerage systems is in the municipalities worst affected by the hurricane. The short-term aims of the institutions involved are to re-establish damaged drinking water and sewerage systems, and to carry out actions to prevent and reduce the risk of epidemics in affected areas; in the medium term, actions will focus on the total reconstruction and repair of damaged systems. In San Ignacio/Santa Elena town a ground storage tank collapsed due to ground saturation and ground shifting caused by rains. This storage tank has more than 20 years in operation.

Project objectives: To replace the affected storage capacity including a new design to consider some improvement in order to reduce vulnerability.

<p>Duration of the project: 3 months Date of initiation: Immediately</p>	<p>National executing agency: Water and Sanitation Authority (WASA)</p>
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Description of activities and tasks: To design, to build and to install a new tank of the same capacity as the collapsed tank is.

<p>Expected results and products: To recover the storage capacity in town in order to have no problems with the water supply to the inhabitants of San Ignacio/Santa Elena.</p>
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Total required investments:	381.0
(BZ\$ thousand)	
• Labour requirements	64.7
(BZ\$ thousand)	
• National inputs:	64.7
• Imported inputs: _____	316.3
Financial requirements (dollars)	
• Local:	114.3
• External:	266.7
• Donation/Loan/Funding _____	
Potential source of financing	
External credit: IDB/CDB	
Donor:	

Special remarks:

BELIZE	No. WS-4
PROJECT TITLE: WATER SUPPLY PREVENTIVE CAPACITY FOR EVACUATION PLAN TO BELMOPAN	

Sector: INFRASTRUCTURE

Subsector: WATER AND SANITATION

Background: Due to the intensive rain caused by the hurricane Keith, the water supply system was affected by flooding in Belmopan city. The pumping station suffered certain damages affecting the electrical equipment and provoked certain water scarcity..

Project objectives: To mitigate water scarcity caused by flooding at the pumping station. To have a back up water supply and to prevent and reduce the risk of epidemics in affected areas.

Duration of the project: 3 months Date of initiation: January 2001	National executing agency: WASA
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Description of activities and tasks: To drill a back up well with pump, motor and electrical controls, including a diesel generator set to provide emergency energy supply, with their respective power house and fuel storage tank.

Expected results and products: To maintain drinking water supply during emergency caused by natural disasters.

Total required investments:	135.50
(BZ\$ thousands)	
• Labour requirements	20.30
(BZ\$)	
• National inputs:	
• Imported inputs: _____	115.20
Financial requirements (dollars)	135.50
• Local:	40.30
• External:	95.20
• Donation/Loan/Funding _____	
Potential source of financing	
External credit: IDB/CDB	
Donor:	

Special remarks:

BELIZE

No. TC-1

PROJECT TITLE: SAN PEDRO'S TELECOMMUNICATION SYSTEM REHABILITATION**Sector: INFRASTRUCTURE****Subsector: TELECOMMUNICATION**

Background: Telecommunications services suffer damages in all the country, however the most important failures are concentrated in the island of San Pedro and Caye Caulker's village. In many localities failures were due not only to rain, flood and wind, but also to lightning storm and power failures. In San Pedro the devastation caused by the hurricane damaged the BTL infrastructure, affecting all the services provided by them, which include, local, long distance, international, data, paging, Internet, and mobile communication. The damages primarily were due to the collapse of a 37.5 m. self-supporting tower, provoked by intensive wind. The rain and flood affected the Exchange and Transmission equipment, while, rain, wind and flood also affected the overhead network and distribution point cases. Additionally many ancillary equipment, such as, payphones, key systems, private automatic branch exchange, Wireless Local Loop, etc. also suffered intensive damage.

Project objectives: To recover the whole communications capacity loosed because the hurricane.

Duration of the project: 6 months

Date of initiation: Immediately

National executing agency: Belize
Telecommunication Limited (BTL)

Description of activities and tasks:

- To design, to build and to install a new tower for telecommunications purpose
- To acquire and to install new electronic equipment for exchanges, wire and wireless communication
- To replace the destroyed overhead and underground networks and ancillary equipment.

Expected results and products: To restore the communication capacity as was before the hurricane.

Total required investments:**(BZ\$ thousand)**

2,910.0

- Labour requirements (BZ\$ thousand) 727.0
- National inputs: 727.0
- Imported inputs: 2182.5

Financial requirements (dollars)

- Local: 900.0
- External: 2010.0
- Donation/Loan/Funding

Potential source of financing

External credit: IDB/CBD

Donor:

Special remarks: The project is already in progress.

BELIZE	No. TC-2
PROJECT TITLE: CAYE CAULKER'S TELECOMMUNICATION SYSTEM REHABILITATION	

Sector: INFRASTRUCTURE

Subsector: TELECOMMUNICATION

Background: In Caye Caulker the devastation caused by the hurricane damaged the BTL infrastructure, affecting all the services provided by BTL, which include, local, long distance, international, data, paging, internet, and mobile communication. The rain and flood affected the Exchange and Transmission equipment, while rain, wind and flood also affected the overhead network and distribution point cases. Additionally many ancillary equipment, such as, payphones, key systems, etc. were damaged. The damaged external network must be replaced as well as the electronic equipment, which was irreversible damaged by rain and flood

Project objectives: To recover the whole communications capacity loosed because the hurricane.

Duration of the project: 6 months Date of initiation: Immediately	National executing agency: Belize Telecommunication Limited (BTL)
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Description of activities and tasks:

- To acquire and to install new electronic equipment for exchanges, wire and wireless communication
- To replace the destroyed overhead and underground networks and ancillary equipment.

Expected results and products: To restore the communication capacity as was before the hurricane.
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<p>Total required investments:</p> <p>(BZ\$ thousand)</p> <ul style="list-style-type: none"> • Labour requirements 485.0 (BZ\$ thousand) • National inputs: 485.0 • Imported inputs: 1,455.0 <p>Financial requirements (dollars)</p> <ul style="list-style-type: none"> • Local: 582.0 • External: 1,358.0 • Donation/Loan/Funding _____ <p>Potential source of financing</p> <p>External credit: IDB/CBD</p> <p>Donor:</p>	<p>Special remarks: The project is already in progress.</p>
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BELIZE	No. T-1
PROYECT TITLE: ENGINEERING STUDIES FOR ROUTE AR2 NORTHERN HIGHWAY SECTION MILE 0,0 - MILE 15,0	

Sector: TRANSPORT**Subsector: HIGHWAYS**

Background: It is necessary to provide a detailed engineering study for the most damaged section of the Northern Highway, due to overflow of the Belize River

Project objectives: Biding documents for reconstruction of the affected sections of the highway

Duration of the project: 4 months Date of initiation:	National executing agency: MWTC&BI
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Description of activities and tasks: Topographic, Soils and Hydrological data, plant, elevation and cross section profile, drainage, culverts, pavement structure, technical specifications, schedule of quantities, drawings and award of contract documents.

Expected results and products: Documents for construction bidding

Total required investments	288,000	BZ\$
Labour requirement (work/month)	7	
National Inputs	86,400	
Imported Inputs	201,600	
<hr/>		
Financial requirements		
Local		
External		
Donation/ Loan / Funding		
<hr/>		
Potential source of financing		
External Credit		
Donor		

Special remarks:

BELIZE	No. T-2
PROYECT TITLE: ENGINEERING STUDIES FOR ROUTE AR1 WESTERN HIGHWAY SECTION MILE 0,0 - MILE 10,0	

Sector: TRANSPORT

Subsector: HIGHWAYS

Background: It is necessary to provide a detailed engineering study for the most damaged section of the Western Highway, due to overflow of the Simbun River

Project objectives: Biding documents for reconstruction of the affected sections of the highway.

Duration of the project: 4 months Date of initiation:	National executing agency: MWTC&BI
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Description of activities and tasks: Topographic, Soils and Hydrological data, plant, elevation and cross section profile, drainage, culverts, pavement structure, technical specifications, schedule of quantities, drawings and award of contract documents.

Expected results and products: Documents for construction bidding

Total required investments	192,000	BZ\$
Labour requirement (work/month)	7	
National Inputs	57,600	
Imported Inputs	134,400	
Financial requirements		
Local		
External		
Donation/ Loan /Funding		
Potential source of financing		
External Credit		
Donor		

Special remarks:

BELIZE	No. T-3
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**PROJECT TITLE: RECONSTRUCTION OF ROUTE AR2 NORTHERN HIGHWAY SECTION
MILE 0,0 - MILE 15,0**

Sector: TRANSPORT

Subsector: HIGHWAYS

Background: It is necessary the reconstruction and upgrading of the most damaged section of the Northern Highway, to prevent overflow of the Belize River

Project objectives: Reconstruction works

Duration of the project: 18 months Date of initiation:	National executing agency: MWTC&BI
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Description of activities and tasks: Earthmoving, fill rise, base, pavement, culverts, marks and signals construction

Expected results and products: Works done

Total required investments	14,400,000	BZ\$
Labour requirement (work/month)	200	
National Inputs	6,480,000	
Imported Inputs	7,920,000	
<hr/>		
Financial requirements		
Local		
External		
Donation/ Loan / Funding		
<hr/>		
Potential source of financing		
External Credit		
Donor		

Special remarks:

BELIZE	No. T-4
PROYECT TITLE: RECONSTRUCTION OF ROUTE AR1 WESTERN HIGHWAY, SECTION MILE 0,0 - MILE 10,0	
Sector: TRANSPORT	Subsector: HIGHWAYS
Background: It is necessary the reconstruction and upgrading of the most damaged section of the Western Highway, to prevent overflow of the Simbun River	

Project objectives: Reconstruction works

Duration of the project: 18 months Date of initiation:	National executing agency: MWTCBI
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Description of activities and tasks: Earthmoving, fill rise, base, pavement, culverts, marks and signals construction

Expected results and products: Works done

Total required investments	9,600,000	BZ\$	Special remarks:
Labour requirement (work/month)	133		
National Inputs	4,320,000		
Imported Inputs	5,280,000		
<hr/>			
Financial requirements			
Local			
External			
Donation/ Loan / Funding			
<hr/>			
Potential source of financing			
External Credit			
Donor			

BELIZE	No. T-5
PROYECT TITLE: RECONSTRUCTION OF SAN PEDROS'S AIRPORT FENCE	
Sector: TRANSPORT	Subsector: AIRPORTS
Background: It is urgently necessary the reconstruction of the airport fence to prevent accidents in the runway	

Project objectives: Reconstruction of fence

Duration of the project: 2 months Date of initiation: Now	National executing agency: Airport Authority
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Description of activities and tasks: Reconstruction of fence

Expected results and predates: Works done

Total required investments	100,000	BZ\$	Special remarks:
Labour requirement (work/month)	13		
National Inputs	80,000		
Imported Inputs	20,000		
<hr/>			
Financial requirements			
Local			
External			
Donation/ Loan / Funding			
<hr/>			
Potential source of financing			
External Credit			
Donor			

BELIZE	No. T-6
PROYECT TITLE: PORT FACILITIES AT AMBERGRIS CAYE AND OTHER	
Sector: TRANSPORT	Subsector: PORTS
Background: It is necessary to construct port facilities in the Cayes (two) to improve the vulnerability and prevent environmental damages	
Project objectives: To supply adequate and safety installations.	

Duration of the project: 12 months	National executing agency: Port Authority
Date of initiation:	
Description of activities and tasks: Construction of ramp, pier bridge, pipes, tanks and buoys at the cayes	
Expected results and products: Works done	

Total required investments	2,000,000	BZ\$
Labour requirement (work/month)	42	
National Inputs	900,000	
Imported Inputs	1,100,000	
<hr/>		
Financial requirements		
Local		
External		
Donation/ Loan / Funding		
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Potential source of financing		
External Credit		
Donor		

Special remarks:

BELIZE	No. T-7
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PROYECT TITLE: MARITIME TRANSPORTATION SUPPLY

Sector: TRANSPORT

Subsector: MARITIME

Background: It is necessary to operate the future port facilities in the cayes with adequate and specialist vessels.

Project objectives: Maritime Transportation Supply

Duration of the project: 24 months

Date of initiation:

National executing agency: Port Authority

Description of activities and tasks: Supply of maritime transportation with a landcraft for freight and another for fuels.

Expected results and products: Vessels operating

Total required investments	4,000,000	BZ\$
Labour requirement (work/month)		
National Inputs		
Imported Inputs	4,000,000	
Financial requirements		
Local		
External		
Donation/ Loan / Funding		
Potential source of financing		
External Credit		
Donor		

Special remarks:

BELIZE		No. T-8																																																					
PROYECT TITLE: HYDROLOGICAL STUDIES FOR DRAINAGE AND CULVERT DESIGN																																																							
Sector: TRANSPORT	Subsector: HIGHWAYS																																																						
Background: It is necessary to define criteria for return periods for drainage, culverts, bridges and wall retaining design																																																							
Project objectives: Obtain rainfall series and period of return criteria for design																																																							
Duration of the project: 3 months Date of initiation:	National executing agency: MWTC&BI																																																						
Description of activities and tasks: Rainfall series and measurement network analysis, calculations and a proposal for periods of returns for each type of structure																																																							
Expected results and products: Design Criteria and Standards																																																							
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Total required investments</td> <td style="width: 20%; text-align: right;">200,000</td> <td style="width: 10%; text-align: right;">BZ\$</td> <td style="width: 30%;"></td> </tr> <tr> <td>Labour requirement (work/month)</td> <td style="text-align: right;">4</td> <td></td> <td></td> </tr> <tr> <td>National Inputs</td> <td style="text-align: right;">50,000</td> <td></td> <td></td> </tr> <tr> <td>Imported Inputs</td> <td style="text-align: right;">150,000</td> <td></td> <td></td> </tr> <tr> <td colspan="4"><hr/></td> </tr> <tr> <td>Financial requirements</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Local</td> <td></td> <td></td> <td></td> </tr> <tr> <td>External</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Donation/ Loan / Funding</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4"><hr/></td> </tr> <tr> <td>Potential source of financing</td> <td></td> <td></td> <td></td> </tr> <tr> <td>External Credit</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Donor</td> <td></td> <td></td> <td></td> </tr> </table>	Total required investments	200,000	BZ\$		Labour requirement (work/month)	4			National Inputs	50,000			Imported Inputs	150,000			<hr/>				Financial requirements				Local				External				Donation/ Loan / Funding				<hr/>				Potential source of financing				External Credit				Donor				Special remarks:		
Total required investments	200,000	BZ\$																																																					
Labour requirement (work/month)	4																																																						
National Inputs	50,000																																																						
Imported Inputs	150,000																																																						
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External Credit																																																							
Donor																																																							

BELIZE	No. T-9
PROYECT TITLE: GEODESIC STUDY FOR HEIGHTS DETERMINATION	

Sector: TRANSPORT

Subsector: HIGHWAYS

Background: It is necessary to increase accuracy of heights determination for any drainage design in Belize, Orange Walk and Corozal Districts

Project objectives: Obtain topographic accuracy references for drainage studies in basins using GPS with a distance of 20 km among them

Duration of the project: 5 months	National executing agency: MWTC&BI
Date of initiation:	

Description of activities and tasks: Topographic reference of heights in the low areas with flooding hazardous

Expected results and products: Topographic Heights Points of reference for design

Total required investments	700,000	BZ\$
Labour requirement (work/month)	4	
National Inputs	210,000	
Imported Inputs	490,000	
<hr/>		
Financial requirements		
Local		
External		
Donation/ Loan / Funding		
<hr/>		
Potential source of financing		
External Credit		
Donor		

Special remarks:

BELIZE	No. T-10
PROJECT TITLE: CANALIZE AND CLEANING OF CULVERTS	
Sector: TRANSPORT	Subsector: HIGHWAYS
Background: It is necessary the maintenance and clearance of culverts from silt and garbage	

Project objectives: Clearance of culverts

Duration of the project: 12 months Date of initiation:	National executing agency: MWTC&BI
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Description of activities and tasks: cleaning of silt and garbage the culvert itself and basin

Expected results and products: Works done
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Total required investments	2,000,000	BZ\$	Special remarks:
Labour requirement (work/month)	200		
National Inputs	2,000,000		
Imported Inputs	0		
<hr/>			
Financial requirements			
Local			
External			
Donation/ Loan / Funding			
<hr/>			
Potential source of financing			
External Credit			
Donor			

BELIZE	No. AGRI-1
PROJECT TITLE: RESTORING THE PRODUCTIVE CAPACITY OF SMALL-SCALE SUGARCANE FARMERS IN THE AREAS AFFECTED BY HURRICANE KEITH	

Sector: ECONOMIC

Subsector: AGRICULTURE

Background. The assessment of the direct and indirect effects to the sugar sector by Hurricane Keith revealed that the sugar industry had suffered total losses of some B\$ 33.8 million using market values. It is estimated that some 2,835 ha of sugarcane were destroyed and most of the fields were adversely affected due to strong winds or widespread flooding. Additionally, it is expected that there will be a general decline in sugar cane quality of approximately 10% due to rooting and lodging of cane stalks. Approximately 5,000 small farmers were affected either directly or indirectly by this hurricane, with most of the damage being concentrated in the fields and communities bordering the Rio Hondo River and New River. This level of damage is very serious especially in view of the fact that the sugar industry contributes about 9% of GDP, employs 13.2% of the labour force and 48.2% of the agricultural labour force, and generates 27% of total foreign exchange for Belize.

Project objectives: The main goal of the proposed project is to allow small-scale sugar cane farmers to quickly re-establish their income generating capacity by regaining their productive capacity to at least pre-Keith levels and to assist them to improve their organization and management systems in order to reduce their vulnerability to such natural and man-made disasters in the future. The small scale canefarmer is one who cultivates less than 8 ha, has an annual income of less than B\$1,500 per family member, and who produces with labor-intensive technology.

- a) To assist small-scale sugarcane farmers in securing affordable and accessible credit to enable them to regain their productive capacity.
- b) To improve the farmers' productive capacity, competitiveness and profitability through the provision of technical assistance, technology and business approaches.
- c) To strengthen the institutions involved in the sugar cane industry to allow for better integration, coordination, support and impact
- d) To establish capacity and infrastructure which will mitigate the adverse effects of flooding and other disasters.

Duration of the project:
Date of initiation: June 2001

National executing agency: The Ministry of Sugar Industry, Labour and Local Government will take the lead role through the Belize Sugar Cane Board, it's main executing arm. It is also expected that key roles will be played by the Belize Cane Farmers Association, Belize Sugar Industries Ltd., the Small Farmers and Business Bank, the Ministry of Agriculture, Commodities Secretariat, Beltraide and IICA.

Description of activities and tasks:

- a) Coordinate and mobilize resources to support farmers to re-establish their production systems and rebuild their productive capacity
- b) Provide technical assistance, training and inputs (i.e. seeds, agrochemicals, farm machinery services) to enable the farmers to enhance productivity and competitiveness yet conserving the natural resources.
- c) Identify and address weaknesses of existing institutions involved in the sugar industry and implement systems to ensure their ability to respond to the needs of the sector.
- d) Assess and establish the necessary infrastructure needed to mitigate the effects of floods and other natural disasters.

Expected results and products:

- a) Regained productivity, profitability and stability of small-scale sugar cane farmers (at least 25% by the end of the project life).
- b) Improved institutional and farmers' capacities (at least 4,000 small-scale cane farmers) to mitigate the adverse socio-economic impact brought about by Hurricane Keith.
- c) Improved management, efficiency and accountability in the sugar cane farmers associations, sugar board and other organizations involved in the industry
- d) Established drainage systems and improved roads in priority areas.

Total required investments:

\$11.9 million

• Labour requirements (work/months)	3.6 Mn
• National inputs:	2.0 Mn
• Imported inputs:	
<hr/>	
Financial requirements (dollars)	
• Infrastructure:	3.0 Mn
• Productive loans:	3.3 Mn
• Donation/Loan/Funding	6.3 Mn

Potential source of financing

External credit: World Bank, IDB

Donor:

Special remarks:

BELIZE	No. AGRI-2
PROJECT TITLE: RESTORATION OF PRODUCTIVE CAPACITY FOR FOOD SECURITY COMMODITIES	
Sector: ECONOMIC	Subsector: AGRICULTURE
<p>Background: Belize is self sufficient in production of domestic food crops which includes rice, corn, beans, root crops, plantains, fruits, pork, beef, poultry and poultry products. These commodities are traditionally cultivated by small and medium size farmers who rely heavily on family labor with the occasional need for hiring of outside help. Primary production is for home consumption with the excess being sold for income generation. Their farming practice is highly diversified and they play a significant role in poverty reduction through contribution to food security, employment and income generation to inhabitants in rural Belize. Furthermore, women and youth are involved in the production process since agriculture is the primary productive activity contributing to social stability in most of these communities</p> <p>The social equilibrium in most of these communities was significantly affected by the devastation caused to crops, livestock and infrastructure as a result of hurricane Keith. Also affected was freshwater fish farming which is an economic activity that was recently introduced to some of the affected areas. In summary, production and productive capacity of the farmers will be retarded for the short and medium terms which could result in food shortages, loss of employment, and a complete disruption of social stability in severely, affected areas. The recovery process from this natural disaster will be slow and costly. The experience from hurricane Keith clearly identified several weaknesses in Belize's agricultural production that needs to be addressed to minimize the potential damaging effects of future natural disasters and to preserve food security for its citizens. This project aims to address these concerns.</p>	
<p>Project objectives: The general objective of this project is to restore the productive capacity of small farm families who suffered damages as a result of hurricane Keith. The primary beneficiary targeted in this project is the small farmer who has limited resources (less than 10 ha), low cash income (less than B\$1,500 per capita per annum) and produces with labor-intensive technology. This project will work with farming systems approaches for producing rice, corn, common beans, soybeans, root crops, plantains, fruits, pork, beef, poultry, and fresh water fish production. Specifically, the project aims to:</p> <ol style="list-style-type: none"> a) Restore food security by rehabilitating farms damaged by hurricane Keith and improve productive infrastructure b) Improve the management, productivity and competitiveness of food and fish production systems, including for cash generation c) Improve farmers' capability and infrastructure for storage, value adding and marketability of food products d) Enable small farm families to reduce devastation from future natural disasters such as hurricanes. 	
<p>Duration of the project: Three years</p> <p>Date of initiation: May 2001</p>	<p>National executing agency: The Ministry of Agriculture, Fisheries and Cooperatives and its partners in development such as BEST, Help for Progress, IICA, ROC, CARDI, Belize Business Bureau, Chamber of Commerce, DFC, Small Farmers and Business Bank, Credit Unions, and Belize Marketing Board.</p>

Description of activities and tasks:

- a) Securing affordable financing, identifying production inputs, providing technical assistance and training in production and management techniques
- b) Introduction of land utilization strategies, and implementation of comprehensive land use options for sustainable development
- c) Introduction of improved germplasm and management practices, and establishment of drainage and irrigation systems
- d) Identification of selected commodities, introduction and dissemination of appropriate technology, and identification of relevant markets
- e) Expansion of small- scale fish farming by upgrading existing hatchery infrastructure, construction of ponds and installation of equipment and supplies, provision of training and technical assistance, and development of effective extension services for fish farming at the farm level.

Expected results and products:

- a) Reliable food production and supply systems, with appropriate capacities and infrastructure in place to ensure stability during disasters and national emergencies
- b) Improved competitiveness realized as a result of improved productivity and profitability at the farm level
- c) Improved standard of living realized as a result of increased food security and cash income derived from sale of surplus production to the market
- d) Reduced risks and devastation from floods and other natural disasters

Total required investments:	B\$15.3 million
• Labour requirements (work/months)	4.8
• National inputs:	4.7
• Imported inputs:	5.8
Financial requirements (dollars)	
• Local:	2.5
• External:	12.8
• Donation/Loan/Funding	44%
Potential source of financing	
External credit:	
Donor: None identified yet.	

Special remarks:

BELIZE	No. AGRI-3
PROJECT TITLE: POST KEITH RESTORATION OF THE PRODUCTIVE CAPACITY OF THE SMALL-SCALE COMMERCIAL FARMER FOR THE EXPORT MARKET.	
Sector: ECONOMIC	Subsector: AGRICULTURE
<p>Background. The assessment of total damages in the agricultural and fisheries sectors is approximately B\$ 156.24 million estimated at market value by ECLAC. The major damage caused by Keith was as a result of flooding that was concentrated in the Cayo, Belize, Orange Walk and Corozal districts. Non-traditional export crops such as papayas, hot peppers, cucurbits, plantains, cotton and fruit trees suffered damages to approximately 300 acres valued at B\$7.5 million. Loss in citrus is estimated at B\$28.5 million. Most affected by the floods are the subsistence and small-scale commercial farmers along the banks of the Rio Hondo, Belize River and New River. This area will require a coordinated approach for medium and long-term strategies to alleviate the loss of income obtained from farming.</p>	

Project objectives: The principal goal is to rehabilitate the productive capacity of the small farmers of the affected areas. The small farmer or producer is one who has limited resources (less than 10 ha), low cash income (less than B\$1,500 per capita per annum) and produces with labor-intensive technology. This project will ensure that they enhance their food and nutrition security, increase their income through export of expanded production, and ensure the sustainability of their farming system.

1. To rehabilitate the productive capacity and competitiveness of the small-scale commercial farmer for export market through capacity building.
2. To improve storage capacity and establish irrigation system for quality improvement and consistent production to enhance export production and quality.
3. To diversify crops and livestock to improve access to markets and agroprocessing to reduce risk and vulnerability.

<p>Duration of the project: Date of initiation: May 2001</p>	<p>National executing agency: Ministry of Agriculture, Fisheries and Cooperatives and its partners in development such as Belize Agricultural Health Authority (BAHA), BELTRAIDE, BEST, Help for Progress, OIRSA, IICA, ROC, CARDI, BBB, Chamber of Commerce, DFC, Small Farmers and Business Bank, Credit Unions and Belize Marketing Board.</p>
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Description of activities and tasks:

1. Training of farmers, development and dissemination of tech packs to increase productivity and competitiveness, conserve our natural resources and organize farmers into production and marketing cooperatives to facilitate their competitiveness.
2. Deliver direct assistance in the form of inputs such as seeds, agrochemical, farm machinery, through producers associations and cooperative enterprises.
3. Establish and facilitate affordable loans to commercial farmers and avail microcredit to small farmers especially women and youths.
4. Provide information on market prices and facilitate market presentation and promote development of new products through diversification of crops and livestock.
5. Improve infrastructure such as drainage, irrigation, feeder roads, packing shed, storage facilities.

Expected results and products:

1. Restored productivity and increased income for farmers in citrus, papayas, cashew, other tropical fruits, hot peppers, cacao, rootcrops, musaceas, cucurbits and honey through institutional and capacity development to these farmers.
2. 400 ha under production of nontraditional export crops and new products developed and marketing strategies in place.
3. Export financing accessible to exporters and processors to increase foreign exchange earnings up to \$25 mn.
4. Infrastructure established for storage, irrigation, drainage, agroprocessing to reduce vulnerability of small-scale commercial producers for the export market to natural disasters.

Total required investments:	\$8.5 mn
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- | | |
|---|--------|
| • Labour requirements
(work/months) | 1.5 mn |
| • National inputs: | 1.0 mn |
| • Imported inputs: _____ | |
| Financial requirements (dollars) | |
| • Infrastructure: | 2.5 mn |
| • Productive loans: | 1.5 mn |
| • Export financing | 2.0 mn |
| • Donation/Loan/Funding _____ | 6.0 mn |

Potential source of financing

External credit: World Bank, IDB

Donor: United States, Japan, Taiwan

Special remarks:

BELIZE	No. AGRI-4
PROJECT TITLE: REHABILITATION OF FISHING INDUSTRY AND RESTORATION OF MARINE ECOSYSTEMS AND WORLD HERITAGE SITES.	
Sector: ECONOMIC	Subsector: FISHERIES
<p>Background: The Fisheries sector of Belize is undergoing serious crisis after the natural disaster of Hurricane Keith that affected the Northern and Central fishing zones. The Hurricane battered the cayes in these areas for approximately three days causing significant economic damage to the fishing community in respect to the infrastructure used for fishing. This Northern and Central fishing zone accounted for more than 80% of the annual lobster production, which is the largest marine fishery earning more than \$19 million dollars in 1999 and employing approximately 2,000 fishermen. The integrity of the fishing grounds and the coral reef habitats were also altered by the hurricane resulting in no production after the event. Preliminary estimates indicate that tremendous losses were sustained by this sector in the area of approximately \$18 million dollars. Fishermen's fishing capacity is now severely impaired due to loss of equipment and gears and the physical damage done to the fishing grounds.</p> <p>The Belize Barrier Reef System was declared a World Heritage site in 1996. This barrier reef complex is one of the major attractions for the tourism industry and it also serves as critical habitat that supports the fishing industry. It has also sustained significant damage by the impact of hurricane Keith. In the Northern and Central region of the barrier reef complex, the reef experienced heavy siltation and physical damage by the hurricane.</p>	
<p>Project objectives: The purpose of the project is to promote and ensure the sustainable management and development of the fisheries and tourism industries, thereby improving the quality of life and protecting the future value of these resources for the local people and for those who benefit from their products and services. Specifically this project aims:</p> <ol style="list-style-type: none"> 1. To rehabilitate and establish the capacity of the fisheries sector to the level it was before the impact of Hurricane Keith. 2. To assess the impacts of hurricane Keith on the marine environment particularly the damage done to the fishing grounds and the barrier reef complex. 3. To protect and conserve the World Heritage sites and natural resources for tourism, fisheries and other valuable cultural and environmental functions. 	
<p>Duration of the project: Three years Date of initiation: June 2001</p>	<p>National executing agency: The Ministry of Agriculture, Fisheries and Cooperatives will execute this project in partnership with the Belize Fishermen Cooperatives Association, Coastal Zone Management Authority, Caricom Fisheries Resource Management Project, Village Councils and other non-governmental organizations presently working with marine protected areas.</p>

Description of activities and tasks:

1. Re-establish the capacity of the fisheries sector in Belize to the level it was before the impact of hurricane Keith.
 - Conduct assessment of losses to fishers through site visits and consultations with the communities.
 - 2) Define mechanisms to distribute assistance to beneficiaries identified through damage assessments.
 - Mobilize resources and evaluate impact on beneficiaries.
2. Assess the impacts of Hurricane Keith on the marine ecosystems which supports both the fishing and tourism industries.
 - Conduct ecological surveys of affected sites.
 - Conduct research and M&E actions to assess damage to marine environ, to make rational policy & mgt decisions for sustainable fishery.
3. Protect and conserve the World heritage Sites and natural resources for tourism, fisheries and other valuable cultural and environmental functions.
 - Assess and repair damage caused to marine reserve's infrastructure and equipment.
 - Conduct assessment of the ecological damage and evaluate damage in both physical and economic terms.

Expected results and products:

- 1) Detail plan on how to distribute benefits to affected fishers
- 2) Availability of finance donated by external donor (s).
- 3) Fishermen well-equipped and full operational capacity regained to facilitate normal catch in Lobster and conch.
- 4) Damage assessment in physical and economic terms.
- 5) Preliminary plan of action for the rehabilitation of fishing grounds and the other marine ecosystems
- 6) Knowledge of damage to coral reef; M&E coral reef recuperation.
- 7) Broader understanding of coral reef in Belize.
- 8) Information to make proper policy and managerial decisions for disaster mitigation.
- 9) Restoring infrastructure and equipment at marine protected areas.

Total required investments:	\$8,200,000
• Labour requirements (work/months)	2.55
• National inputs:	4.3
• Imported inputs:	1.25
Financial requirements (dollars)	
• Local:	1.1
• External:	7.1
• Donation/Loan/Funding	64.4%
Potential source of financing	
External credit: Donor: Contact made with Japanese International Cooperation Agency, European Union, and United Nations Development Program.	

Special remarks:

BELIZE	No. AGRI-5
PROJECT TITLE: FORESTRY AND AGROFORESTRY SYSTEMS FOR DISASTER MITIGATION AND SUSTAINABLE DEVELOPMENT	
Sector: ECONOMIC	Subsector: AGRICULTURE AND FORESTRY
<p>Background. The dynamic evolution of land demand and use has transformed the natural resources of Belize towards different systems of exploitation, such as intensive logging, shifting cultivation, extensive cattle ranching, permanent crops (e.g. sugar cane, citrus and banana), intensive cropping systems, and tourism and ecotourism. Such development principally has affected the more fertile areas as well as riparian areas, due to their higher productive capacity and economic advantage when rivers were the only medium of transportation.</p> <p>The heavy rainfall and flooding associated with hurricane Keith exacerbated the economic damage to the agricultural systems and natural ecosystems due to the lack of protective vegetative cover or physical barriers particularly in the low lying and riverine areas of the country. In addition, the runoff from the hilly areas in western and southern region of the country has significantly affected the fishing and tourist industries due to the huge deposits of silt and darkening of the coastal and reef ecosystem.</p> <p>Project objectives: The purpose of this project is to improve well being of the rural people, reduce the vulnerability of rural communities and families who suffered from Hurricane Keith and to create local “ownership” and impact on the small poor families, women and youth. The specific objectives are:</p> <ol style="list-style-type: none"> 1. To reduce soil erosion and mitigate the adverse effect of natural disasters such as hurricanes and flooding. 2. To increase the diversity, productivity and resiliency of agricultural systems for the well-being of local communities. 3. To improve and provide effective institutional services for forestry and agroforestry development in Belize. 	
<p>Duration of the project: Five years Date of initiation: June 2001</p>	<p>National executing agency: Ministry of Agriculture, Fisheries and Cooperatives will execute the project in partnership with Ministry of Natural Resources, Environment and Industry. Conservation non-governmental organizations, municipal and village council associations, and community-based groups would be involved in project planning; and international/regional research and development agencies (e.g. Centro Agronomico Tropical de Investigacion y Educacion, Instituto Inter-Americano de Cooperacion para la Agricultura, and Department for International Development of the UK) would provide support.</p>

Description of activities and tasks:

1. Disaster mitigation in protected and/or private forests/secondary vegetation :
 - Sustainable management of watersheds, forest protected areas and logging resources
 - Enrichment of natural forests with precious tropical species (e.g. mahogany, cedar, sapodilla and ziricote trees)
 - Forest fire management and control
 - Utilization of renewable resources from the forests, such as medicinal product, wild animals orchids and artesenary products, and added value

2. Diversity, productivity and resiliency of agricultural systems
 - Multi-strata systems with annual crops and multi-purpose trees with medium and long term products
 - Silvopastoral systems with live fencing, fodder banks and scattered trees
 - Development of alley farming systems to raise and stabilize crop
 - Enrichment of fallow areas with high value tree species
 - Reforestation with mixtures of fast growing, nitrogen fixing multipurpose
 - Promotion of taungya system which is the management of short term crops during the early phase of the establishment of a forest plantation, and
 - Reforestation of riparian buffer zone (should be 20 meters wide by law) to eliminate soil erosion and run-off.

3. Strategic Areas for Institutional Strengthening
 - Formulation and enforcement of enabling policy, legislation and incentive systems for participation at the national and local levels
 - Applied and adaptive research and demonstration of appropriate options and technologies to address present constraints and future potentials
 - Training, education and information for professionals, decision makers, and rural people
 - Infrastructure for producing planting materials, management and utilization of tree products
 - Participatory and partnership building mechanisms among state and non-state actors including in particular the private sector and civil society.

Expected results and products:

Medium Term:

1. Conservation, enrichment and management of 20,000 ha of primary and secondary forests
2. Reforestation of 4,000 ha of riparian areas
3. Establishment of agroforestry systems on 6,000 ha of agricultural lands
4. Training of policy makers (20), personnel (100) and producers and rural inhabitants (4,000)
5. Technology development and transfer institutions (2 state and 4 non-state) with capacity to provide effective support

Long term:

1. Increased income and quality of life for the rural communities and families, including women and youth
2. Enhanced productivity and stability of the agricultural systems
3. Conservation and improvement of the basic resources (i.e. soil, forest and diversity) for local communities, country and planet
4. Institutional efficiency and effectiveness for sustainable agricultural and rural development

Total required investments:	B\$7.5
• Labour requirements (work/months)	3.0
• National inputs:	2.8
• Imported inputs:	1.7
Financial requirements (dollars)	
• Local:	0.5
• External:	7.0
• Donation/Loan/Funding	45%
Potential source of financing	
External credit:	
Donor: None at present, however dialogue is in progress with Department for International Development of the UK, European Union and World Bank.	

Special remarks:

BELIZE	No. TUR-1
PROJECT TITLE: STRATEGY FOR STRENGTHENING SUSTAINABLE TOURISM POLICIES	

Sector: TOURISM/ENVIRONMENT

Subsector:

Background: The characteristics of Belize's tourism is well suited to the fragile natural assets on which the country's tourism is based. Although tourism is essentially a private sector activity, the government normally works as a partner to further the interests of this sector. In Belize this partnership is facilitated by the small size of population and the universal acceptance of the type of tourism that Belize should market (ecotourism). As an important asset for the future of the tourism sector, in Belize there is agreement at all levels (private sector, NGOs and communities) that natural resources must be conserved in the wider interest, but also as the base for tourism.

Belize is a country that is well-positioned in the market of tourism based on natural resources endowment. As a first condition in order for Belize to continue attracting tourist, the environment must be preserved. In addition, tourism must contribute to sustainable development of Belize by promoting economic growth, environmental protection and social equity. In this sense, the image projected by the country must be in coherence with their environmental and social performance.

Given current concerns about the health of the reef and linked to the proposal of Land Use Management Plans for the Coastal Area of Belize, there is scope for policies aimed at promote a more sustainable tourism. For example, to assist existing hotels to improve quality and environmentally and socially friendly practices. These include norms and standards for buildings and public infrastructure, best practices for sanitation and environmental mitigation and participation of local communities accomplishing labour legislation. At a national level, introduction of ISO 9000 and 14000 standards would facilitate improved environmental management. It could be also interesting to analyse the certification system developed by Costa Rica. It is a voluntary system by which hotels are classified according to their environmental and social performance. Hotels best ranked have advantages in terms of reputation and promotion. At present Costa Rica marketing campaigns on tourism highlight its efforts to promote sustainable development.

Project objectives: To introduce elements of the sustainable development approach in the strategy for tourist development.

Duration of the project: 24 months

Date of initiation: January 2001

National executing agency: The Belize Tourism Board, Belize Tourism Industry Association, Ministry of Natural Resources, Environment and Industry, Coastal Zone Management Authority, and other relevant actors

Description of activities and tasks:

- To analyse environmental and social performance of tourist sector
- To define a strategy for sustainable tourism, including economic incentives and self-regulation instruments. This process must be carried out through a wide participation of the actors involved
- To review existing legal and institutional framework

Expected results and products: Consented strategy for sustainable tourism

Total required investments: (Bz\$dollars)

- Labour requirements
(work/months)

- National inputs:

- Imported inputs: _____

Financial requirements (Bz\$dollars)

1,000,000

- Local:

1,000,000

- External:

- Donation/Loan/Funding

Potential source of financing

External credit:

Donor:

Special remarks:

BELIZE	No. ENV-1
PROYECTO TITLE: ASSESSMENT OF MANGROVE REPLANTING PROGRAMME AT MOST VULNERABLE SITES	

Sector: ENVIRONMENT

Subsector:

Background: Mangrove and wetland ecosystems provide important environmental goods and services: coastal protection, wildlife/seabirds habitat, water purification and wastewater treatment, timber and fish nursery. However, antropogenic interventions (in the cayes, primarily tourist coastal development) and natural extreme events (as hurricanes) have affected their intrinsic productivity as a source of environmental goods and services. According to preliminary estimations, hurricane Keith damaged about 5,000 acres (mainly defoliation and isolated uprooted trees).

There is a preliminary proposal of Mangrove Restoration Programme aimed at replanting “500 acres of fringing mangroves” at most vulnerable sites. Similar experiences show different costs of replanting per acre (ranging from Bz\$9,000 to Bz\$160,000). Potential of natural recovery have not been still assessed.

Project objectives: To assess the feasibility of a Mangrove Restoration Programme by comparing the costs and benefits involved in the strategy of “doing nothing” (natural recovery) against the costs and benefits of a replanting Programme.

Duration of the project: 12 months

Date of initiation: immediately

National executing agency: Ministry of Natural Resources, Environment and Industry

Description of activities and tasks: To assess mangrove damages and the potential for natural regeneration

- To estimate the costs of replanting
- To select the most vulnerable sites
- To analyse costs and benefits regarding restoration of most vulnerable sites

Expected results and products: A study containing technical and economic assessment of the feasibility of Mangrove Replanting Programme that allow make a decision on its implementation

Total required investments: (Bz\$dollars)	
• Labour requirements (work/months)	
• National inputs:	
• Imported inputs: _____	
Financial requirements (Bz\$dollars)	120,000
• Local:	24,000
• External:	
• Donation/Loan/Funding _____	96,000
Potential source of financing	
External credit:	
Donor: IADB, the World Bank, CDB	

Special remarks:

BELIZE	No. Env-2
PROJECT TITLE: CORAL REEF MONITORING AND ASSESSMENT PROGRAMME	

Sector: COASTAL MANAGEMENT

Subsector:

Background: The Belize Barrier Reef (BBR) is considered one of the “Seven Underwater Wonders of the World” and received recognition as a World Heritage site in 1996. There are certain indications that this unique ecosystem, that is a part of the Mesoamerican Barrier Reef System, is beginning an incipient process of deterioration¹. The barrier reef is the main tourist attraction for Belize and, at the same time, is also a global asset. The barrier reef supports many species of significant commercial value to fisheries and other interests, and provide habitat for many endangered species.

Taking into account that BBR has suffered a sequence of catastrophic disturbance effects (bleaching event in 1998, hurricane Mitch in the same year and hurricane Keith this year) efforts in monitoring must be strengthened to evaluate reef damage and recovery.

At present the Coastal Zone Management Authority and Institute are in charge of this task, which is supported by international financing through the Mesoamerican Barrier Reef System project.

¹ For example, in the Maldivas, the death of the reefs has had an economic cost of US\$63 million (*The Economist, October 28th 2000*)

Project objectives: To monitor ecological status of the Barrier Reef System evaluating reef damage and recovery in order to establish immediate restricted-use marine protection areas to minimize further degradation or alteration of severely disturbed areas and to promote the implementation of marine protection policies.

Duration of the project: Permanent

Date of initiation: immediately

National executing agency: The Coastal Zone Management Authority and Institute

Description of activities and tasks: Conduct scientific research that investigates questions on reef structure, composition and ecological processes.

Identify important reef habitats in order to develop a network of protected critical coral reef habitats to protect. To establish the linkages between ecological status of the coral reef and the impacts of activities such as tourism, agriculture, industry, fishing, navigation, etc.

Expected results and products: A monitoring system established evaluating permanently ecological status of the barrier reef.

Total required investments: (Bz\$dollars)

- Labour requirements
(work/months)

- National inputs:

- Imported inputs: _____

Financial requirements (Bz\$dollars)

- Local:

- External:

- Donation/Loan/Funding _____

Potential source of financing

External credit:

Donor: GEF

Special remarks:

Permanent activity under responsibility of the CZMA and the CZMI and supported by the Global Environmental Facility. In Belize, the allocation of GEF funds to the Programme *Conservation and Sustainable Use of the Barrier Reef Complex* is US\$5,355,000 (in this Programme monitoring activities are included)

BELIZE

No. ENV-3

PROJECT TITLE: BEACH CLEAN UP PROGRAMME FOR BEACHES AT CAYE CAULKER AND AT AMBERGRIS CAYE

Sector: COASTAL MANAGEMENT

Subsector:

Background: Caye Caulker, Caye Chapel and Ambergris Caye were impacted by hurricane Keith. In the case of Caye Chapel almost its entire seawall collapsed. In Caye Caulker the greatest erosion occurred at the "Split", which had almost doubled in width, and had been deepened. At Ambergris Caye shoreline erosion was limited to the south-eastern coastline where water came overland from the West. The area affected in Caye Caulker and Ambergris Caye is estimated in 15,800 m²

In addition to loss of beaches caused by erosion, an important percentage of them were covered by debris and sea-grasses. To recover their recreational value should be cleaned up.

Project objectives: To clean-up beaches affected by hurricane Keith. It must be taken into account the benefits distribution of these activities in order to involve private financing participation. Actually, hotels are actively participating in the recovery of beaches. The work should be carried out as soon as possible as tourist high season is coming.

Duration of the project: 3 months

Date of initiation: immediately

National executing agency: The Coastal Zone Management Authority

Description of activities and tasks: Beach clean-up

Expected results and products: Beaches of public use affected by hurricane Keith cleaned up and in conditions for recreational activities.

Total required investments: (Bz\$dollars)

- Labour requirements
(work/months)

- National inputs:

- Imported inputs: _____

Financial requirements (Bz\$dollars) 1,060,000

- Local: 1,060,000

- External:

- Donation/Loan/Funding _____

Potential source of financing

External credit:

Donor:

Special remarks:

BELIZE	No. ENV-4
PROYECT TITLE: REHABILITATION OF THE “SPLIT” AT CAYE CAULKER	

Sector: COASTAL MAMAGEMENT

Subsector:

Background: In 1961, Hurricane Hattie split Caye Caulker in two, a northern and a southern section. Since that time, development has taken place almost exclusively on the southern half of the cay. At the split between the two halves, a tourist attraction has developed, with visitors to the cay being encouraged to swim at the “Split”. Subsequently, a restaurant/bar and hotel have also been developed here.

In an effort to protect the coast at this location, plastic sheet pile walls were driven along the south shore of the “Split”. Water depths in this feature were typically 5 metres. As a result of the storm surge, which built up on the western side of the cayes during Hurricane Keith (anecdotal evidence has this at approx. 2 m), the plastic sheets were destroyed and extensive erosion occurred on both sides of the “Split”. The width of this feature roughly doubled, with attendant loss of land on both sides, and the water depth increased to approximately 8 metres.

There is presently a need to restore this feature and the adjacent shorelines to the north and south of it. In addition, residents of Caye Caulker have also commented on the possibility of filling in the space between the two halves of the cay. Whether the “Split” is therefore restored to its former state, or closed somewhat, it is necessary for a hydraulic assessment to be made, with a most feasible shoreline protection solution being selected.

Project objectives: To evaluate the hydraulic characteristics of the “Split”, to advise the Government of Belize and the Caye Caulker Village Council as to the best way forward to implement repairs while achieving both development and tourism objectives (including the most feasible manner of providing a connection between the two halves of the channel), and to have the works implemented. It is recommended that rather than replacing the plastic sheet pile walls, a revetment may be considered, as this is a more cost-effective solution.

Duration of the project: 12 months

Date of initiation: January 2001

National executing agency: The Coastal Zone Management Authority, Public Works Department, Caye Caulker Village Council

Description of activities and tasks: Evaluate and assess development vision for Caye Caulker area

- Investigate hydraulic performance of “Split”. Investigate repair and infilling scenarios. Present findings, concepts and costs to stakeholders. Prepare drawings and technical specifications for preferred option. Construct selected options

Expected results and products: Proper understanding of channel hydraulics; implementation of development “vision”; achievement of a stable channel; and a proper connection between the north and south halves of the cay.

Total required investments: (Bz\$dollars)

• Labour requirements (work/months)	
• National inputs:	
• Imported inputs:	
Financial requirements (Bz\$dollars)	3,000,000
• Local:	2,800,000
• External:	200,000
• Donation/Loan/Funding	
Potential source of financing	
External credit:	
Donor: IDB	

Special remarks:

BELIZE	No. ENV-5
PROJECT TITLE: REPAIR AND REFORESTATION OF ERODED AND VULNERABLE AREAS	

Sector: ENVIRONMENT**Subsector:**

Background: Some of the main threats to the reef arise from i) algae growth, which destroys live coral and is stimulated by the nutrient enrichment of rivers and coastal and marine waters from heavy fertilizer use, principally on bananas, domestic sewage pollution and agro-industrial effluents; b) sediment in marine waters which prevents sun and light from reaching the reef and which occurs because of soil erosion from agricultural practices, clearcutting and deforestation, marine dredging and sand mining, and destruction of seagrass beds and mangroves, which destroys their function as filters.

Waste generated by citrus factories, banana industry and sugar refinery are the most important sources of agro-industrial effluents affecting coastal ecosystems. Despite waste treatment has improved in recent years, they still constitute a threat to reef.

Wetlands, including mangroves, act as a natural sink for terrestrial run-off and pollutants, particularly from the sixteen major watersheds that drain into the numerous lagoons throughout the coastal area.

Eroded and vulnerable areas estimated by the Environment Committee of the National Emergency Management Organization (NEMO) extend along 115,000 m. of length and 20 m. width.

Project objectives: To restore eroded river banks aimed at protecting the marine ecosystem from receiving excessive agriculture runoff and reducing the impacts of siltation and sedimentation on the Barrier Reef.

Duration of the project: 12 months

Date of initiation: immediately

National executing agency: Ministry of Natural Resources, Environment and Industry in coordination with The Coastal Zone Management Institute

- **Description of activities and tasks:** To identify eroded and the most vulnerable sites of riverbanks. Reforestation. Monitoring of water quality (a task of the CZM Institute).

Expected results and products: River banks reforested and consequently, less pollutants affecting Barrier Reef

Total required investments: (Bz\$dollars)

- Labour requirements
(work/months)

- National inputs:

- Imported inputs: _____

Financial requirements (Bz\$dollars) 2,000,000

- Local: 400,000

- External:

- Donation/Loan/Funding _____ 1,600,000

Potential source of financing

External credit:

Donor: IADB, The World Bank, GEF

Special remarks:

BELIZE	No. ENV-6
REHABILITATION OF ARCHAEOLOGICAL SITES AND PROTECTED AREAS INFRASTRUCTURE DAMAGED	

Sector: ENVIRONMENT/CULTURE

Subsector:

Background: Hurricane Keith damaged archaeological sites and protected areas infrastructure. At least Mayan ruins of Lamanai and the Crooked Tree Wildlife Sanctuary (which is managed by the ONG Belize Audobon Society) suffered infrastructure damages which demand rehabilitation works. In the case of Lamanai, Mayan pyramids suffered minor damages but its vulnerability to future extreme events increased. Other archaeological sites and protected areas could also suffered damages.

Project objectives: To rehabilitate damaged archaeological sites and protected areas infrastructure. In the case of the archaeological sites it is necessary to prevent future damages.

Duration of the project: 3 months Date of initiation: immediately	National executing agency: Ministry of Natural Resources, Environment and Industry (Belize Audobon Society) Department of Archaeology
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- **Description of activities and tasks:** To assess damages at national level
- Cleaning-up (fallen trees, rocks, waste)
- Rehabilitation of infrastructure.

Expected results and products: Archaeological sites and protected areas infrastructure damaged by hurricane Keith rehabilitated and reinforced to resist future extreme events

Total required investments: (Bz\$dollars)	500,000	Special remarks:
• Labour requirements (work/months)	50	
• National inputs:		
• Imported inputs: _____		
Financial requirements (Bz\$dollars)	500,000	
• Local:	200,000	
• External:		
• Donation/Loan/Funding _____	300,000	
Potential source of financing		
External credit:		
Donor:		

BELIZE	No. ENV-7
WASTE MANAGEMENT IN COASTAL AREAS (INCLUDING ECONOMIC INSTRUMENTS FOR WASTE MANAGEMENT)	

Sector: COASTAL MANAGEMENT

Subsector:

Background: Regarding waste management, National Environmental Action Plan of Belize states that *At present waste management systems in coastal areas are incompatible with public desire for health, the maintenance of a healthy environment and the development of tourism. At present wastes are disposed of in open dumps in all regions of the country. These dumps generate odour, leachate and air pollutants; their unsanitary conditions result in diseases, ill health and environmental degradation. Initiatives to reduce waste generation, compost, or recycle have generally not been undertaken. Wastes are commonly dumped indiscriminately in mangroves, on street sides and anywhere convenient. In the coastal zone this situation currently provides a threat to marine and reef ecosystems. The Government of Belize had established a Solid Waste Management Authority (SWMA) but it has not yet been activated.*

The legal framework for a Solid Waste Management exists, but may need to be revised. Regarding utilisation of economic instruments to environmental management, there are already some pollution taxes in existence such as the effluent licenses. However this system does not charge according to the amount of pollution produced and does not cover other pollutants such as waste disposal.

Project objectives: To implement appropriate waste management systems in the coastal areas. The system must be based on the Polluter Pays Principle, and include the introduction of solid waste collection and disposal fees (economic instruments). The system must include sustainable management options including waste reduction, reuse and recycling when technically and economically feasible. The use of economic incentives (such as subsidies, tax reduction, etc.) should also be analysed to promote waste reduction, reuse and recycling.

Duration of the project: 12 months

Date of initiation: January 2001

National executing agency: The Coastal Zone Management Authority and Local Authorities

Description of activities and tasks:

- To analyse waste management solutions from a technical viewpoint.
- To establish fees covering waste collection and disposal fees.
- To analyse the convenience of using economic incentives to foster waste reduction, reuse and recycling.
- To establish an institutional framework taking into account the importance of the roll that local authorities play

Expected results and products: Waste management systems designed and implemented in Coastal Areas to promote population health and sustainable tourism

Total required investments: (Bz\$dollars)

• Labour requirements (work/months)	
• National inputs:	
• Imported inputs:	
Financial requirements (Bz\$dollars)	1,500,000
• Local:	750,000
• External:	
• Donation/Loan/Funding	750,000
Potential source of financing	
External credit:	
Donor: The World Bank, IADB, CDB	

Special remarks:

The system must be self-financed

BELIZE	No. ENV-8
FORMULATION OF LAND USE MANAGEMENT PLANS FOR THE COASTAL AREA OF BELIZE	

Sector: LAND-USE PLANNING

Subsector:

Background: Coastal areas in cayes of Belize are characterised by conflicts among a wide range of resource users and uses. Because of the concentration of many activities, infrastructures and settlements in the coastal zone, important economic and social uses compete for small and scarce resources. This situation could be aggravated, in recent years, by the rapid growth of tourism and the changes it has brought to coastal environments and economies.

The characteristics of Belize's tourism (lack of mass tourists and charters, small hotels) is well suited to the fragile natural assets on which Belize's tourism is based. However, 70% of the cayes currently being claimed through lease or ownership. The consequent development pressures are having an increasingly negative impact on the coastal resources, including a diminishing of the aesthetic appeal of one of the country's main tourism and recreational attractions. Several of the larger and more accessible cayes are already substantially developed (Ambergris and Caulker).

Many of these problems could be avoided if land use could be guided by a planning process which identifies land suitable for the purpose and zones it accordingly.

The Coastal Zone Management Authority and the Coastal Zone Management Institute were established in 1998 to implement and monitor policies that govern the use and development of the Belize Coastal Zone. There exists an integrated management plan for the fragile cayes named "Cayes Development Policy". However this and other zoning plans have not been formally adopted by Government and therefore, its accomplishment is not compulsory.

Project objectives: To complete zoning plans in the cayes in which there have not been made. The plans should establish marine reserves, fishing priority areas, recreational zones and mooring areas for pleasure boats. Carrying capacity of fragile ecosystems (above all the Belize Barrier Reef) must be taken into account in planning land-use. The sustainable development of the cayes should be a planning process with a wide participation of the actors involved in order to develop a clear consensus on vision, mission and objectives. These plans should have the highest political support.

Duration of the project: 24 months

Date of initiation: January 2001

National executing agency: The Coastal Zone Management Authority and the Planning Authority

Description of activities and tasks:

- To assess the sustainable use of different resources in coastal areas
- To propose zoning depending on the sustainable use of the resources.
- To initiate a participatory planning process to guide the use of coastal and marine resources in the area with the actors involved (hotel owners, fishermen, tourism workers, local authorities, government institutions responsible for fisheries, tourism, environment, forest, mining, etc.).

Expected results and products: Zoning plans in the most important coastal areas of Belize that govern the sustainable use and development of the Belize Coastal Zone, including the mechanisms to monitor the various activities within the coastal zone.

Total required investments: (Bz\$dollars)

• Labour requirements (work/months)	
• National inputs:	
• Imported inputs:	
Financial requirements (Bz\$dollars)	1,000,000
• Local:	500,000
• External:	
• Donation/Loan/Funding	500,000
Potential source of financing	
External credit:	
Donor: IADB, the World Bank, CDB, GEF	

Special remarks:

BELIZE	No. Env-9
DEVELOPMENT OF SHELTERS FOR AMBERGRIS CAYE AND CAYE CAULKER	

Sector: LAND-USE PLANNING

Subsector:

Background: The Government of Belize, through the National Emergency Management Organization, has initiated a project whereby national shelters will be established in each district of Belize. It is the intention that these building will be multi-purpose, and should be able to hold a significant number of people in need. For Belize District, a shelter is proposed to be implemented in the Belize City environs. Consequently, the cayes have been omitted from this consideration on the assumption that it would be possible to evacuate people to the mainland.

The recent Hurricane Keith has demonstrated that it is possible for a hurricane to experience such rapid development that it can become impossible to adequately evacuate people from the cayes. This is worsened by the fact that the population estimates for Ambergris Caye range from 4500 up to 9500.

Given the capacity for airlifting and transportation by sea, it is anticipated that a minimum of 48 hours would be required to safely evacuate all residents at risk on these cayes. Because of this, it is necessary for proper and adequate shelter capacity to be developed on both cayes.

Project objectives: To identify a safe floor elevation for a shelter on the cayes; to identify a maximum expected depth of scour (of the foreshore) from wave erosion, so as to develop a safe foundation depth for such buildings; and to identify existing suitable buildings, or the need for new buildings that would be multi-purpose.

Duration of the project: 18 months

Date of initiation: January 2001

National executing agency: The National Emergency Management Organization; Ministry of Economic Development

Description of activities and tasks:

- Identify existing suitable buildings, if any on these two cayes
- Estimate a safe floor level to withstand storm surge of a category V hurricane
- Estimate the foreshore scour that would be expected from storm waves
- Evaluate the infrastructure needs to accommodate the expected number of people requiring a shelter.

Expected results and products: Identification of suitable buildings for shelters; quantification of the upgrading needs for such buildings; or need for new buildings.

Total required investments: (Bz\$dollars)

• Labour requirements (work/months)	
• National inputs:	
• Imported inputs: _____	
Financial requirements (Bz\$dollars)	2,000,000
• Local:	1,000,000
• External:	1,000,000
• Donation/Loan/Funding _____	
Potential source of financing	
External credit:	
Donor: IADB, the World Bank, CDB	

Special remarks:

BELIZE	No. Prev-1
NATIONAL METEOROLOGICAL NETWORK FOR LOCAL ENHANCED CAPACITY	
Sector: Land-use planning	Subsector:
<p>Background: National Meteorological network for local enhanced capacity</p> <p>The recent Hurricane Keith has demonstrated that it is possible for a hurricane to experience such rapid development that an enhanced capacity to predict meteorological changes is necessary to have an adequate early warning system in the country.</p>	
<p>Project objectives:</p> <p>To develop a national capacity to monitor, follow-up and alert of weather changes in order to enhance the country's early warning capacity</p>	
<p>Duration of the project: 8 months</p> <p>Date of initiation: January 2001</p>	<p>National Executing Agency: The National Meteorological Service</p>
<p>Description of activities and tasks:</p> <ul style="list-style-type: none"> ▪ To install a Primary Weather Satellite Reception System } ▪ Train national staff in its operation ▪ Incorporate in NEMO's operational plan and disaster prevention programme- 	
<p>Expected results and products:</p> <ol style="list-style-type: none"> 1. The National Meteorological Service requires a Primary Weather Satellite Reception System. The Met. Office presently has a low-resolution secondary satellite reception system (WEFAX). The Primary System would enable the Met. Office to receive high-resolution imagery every 15 minutes, instead of low-resolution images once every hour. Local meteorologists would be able to estimate the location of a hurricane every 15 minutes. This would be independent of estimates provided by the radar. The system would allow coverage of the entire Caribbean at 1 km resolution. The system can also provide rainfall estimates. 	

Total required investments: (Bz\$dollars)	
• Labour requirements (work/months)	
• National inputs:	
• Imported inputs:	
Financial requirements (Bz\$dollars)	100,000
• Local:	
• External:	100,000
• <u>Donation/Loan/Funding</u>	
Potential source of financing	
External credit:	
Donor: IADB, the World Bank, CDB	

Special Remarks: