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# **CARIBBEAN REGIONAL COMMUNITY REVITALIZATION AND DISASTER MITIGATION PROGRAM**

FINAL REPORT

MARCH 2006

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# **CARIBBEAN REGIONAL COMMUNITY REVITALIZATION AND DISASTER MITIGATION PROGRAM**

## **FINAL REPORT**

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Please direct all queries regarding this report to:  
Planning and Development Collaborative International (PADCO)  
1025 Thomas Jefferson St., NW  
Suite 170, Washington DC, 20007  
Telephone: +1 (202) 337-2326  
Fax: +1 (202) 944-2351  
Email: [padco@padco.aecom.com](mailto:padco@padco.aecom.com)

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## Acronyms

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ARD	Agency for Reconstruction and Development
CARICOM	Caribbean Community
CDB	Caribbean Development Bank
CDERA	Caribbean Disaster Emergency Response Agency
CERT	Community Emergency Response Team
DIPU	Division of Infrastructure and Public Utilities
DLGCD	Department of Local Government and Community Development
ESDU	Environment and Sustainable Development Unit
GOB	Government of the Commonwealth of the Bahamas
GOTT	Government of Trinidad and Tobago
HH	Household
MoH	Ministry of Housing
MoSSaiC	Management of Slope Stability in Communities
NDF	National Development Foundation
NEMA	National Emergency Management Agency
NEMO	National Emergency Management Office
OECS	Organization of Eastern Caribbean States
PADCO	Planning and Development Collaborative International
PRF	Poverty Reduction Fund
THA	Tobago House of Assembly
UNDP	United Nations Development Programme
UTECH	University of Technology

## I. Executive Summary

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Between March 22, 2005 and March 31, 2006, USAID, through its implementing partner Planning and Development Collaborative International, Inc. (PADCO), funded and managed post-hurricane recovery and reconstruction activities on the islands of Tobago and the Bahamas. PADCO also supported USAID to develop an “Action Agenda” to guide USAID’s future disaster mitigation policies and programs in assisting the region to reduce the risk of catastrophic loss from future natural disasters, particularly for the most vulnerable populations.

In the Bahamas, PADCO focused on the priority need of reconstructing houses in the low-income community of West End, Grand Bahama, subcontracting the construction of 19 houses in total. PADCO also provided homeowner education to the beneficiaries and members of the West End community. Through seminars and pamphlets, PADCO helped them to better understand the threats of natural disasters to their homes, how they can prepare for them, and how to maintain the hurricane resistant design features of their homes.

In Tobago, PADCO focused its resources on hillside stabilization and training Community Emergency Response Teams (CERTs). PADCO subcontracted the construction of three retaining walls to stabilize collapsed hillsides along the main east-west road crossing the island, Windward Road. These structures will keep this road passable to emergency vehicles and everyday traffic following future storm events, allowing the citizens and economy operate as usual. PADCO also supported the National Emergency Management Agency (NEMA) of Tobago to organize, train, and equip 38 people to form three CERTs. These CERTs will be stationed in three remote communities to help prepare the residents for future human and natural disasters and to be first-responders to such emergencies.

To promote disaster mitigation and preparedness throughout the Caribbean region, PADCO spearheaded the definition, promotion, and implementation of a disaster mitigation “Action Agenda” for USAID to support and include in their USAID 2005–2009 Caribbean Regional Strategy. The agenda focuses on reducing the risk of catastrophic loss from future natural disasters, particularly to vulnerable populations, by working with host governments to undertake active mitigation programs. PADCO worked closely with the Organization of Eastern Caribbean States (OECS) to develop and promote this agenda in the region. As part of this promotion, PADCO implemented three pilot projects to demonstrate elements of the agenda and engage host countries in sustaining these disaster mitigation activities in their countries. Pilot projects were implemented in St. Lucia, Dominica, and Antigua.

At the completion of these pilot projects and this program, PADCO hosted a “Lessons Learned” conference in partnership with OECS to review the success of these activities, solicit further support for such actions, and establish “next steps” for the region to move forward with this agenda.

## **II. Background**

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### **1 Impact of 2004 Hurricanes Season on Tobago and Bahamas**

#### **1.1 Bahamas**

The islands of the Bahamas were impacted by two category 3 hurricanes in 2004. On September 2, Hurricane Frances struck the Bahamas, passing directly over Grand Bahama on September 3. This hurricane caused two deaths and affected more than 8,000 people in Grand Bahamas Island. On Saturday, September 25, just three weeks after Hurricane Frances, Hurricane Jeanne made landfall in the Bahamas causing even greater damage than Frances. Both storms brought heavy winds and storm surge to these low-lying islands. The most significant impact was experienced on the Islands of Grand Bahama and Abaco, where several hundred homes were damaged.

Both storms affected many of the same areas, causing many of the homes initially weakened by Frances to be more seriously damaged during Jeanne. In the West End, roofs were lost, some structures completely collapsed, and storm surge caused extensive flooding. In some areas, flood waters rose to more than six feet. Electricity services were cut and water supplies were limited in many areas. In Eight Mile Rock (neighboring West End), over 75 percent of the homes experienced serious structural damage.

#### **1.2 Tobago**

On September 7, 2004, Hurricane Ivan passed north of the island of Tobago as a Category 3 hurricane. Hurricane Ivan weakened or destroyed many houses and destabilized trees and hillsides—leaving two people dead. Two months after Ivan passed, incessant rains, beginning on November 12, exacerbated the previous damage. During a 6-hour period from 2:00am to 8:00am, the measured rainfall at Crown Point was 201mm. From this significant rainfall, the NEMA reported the following: 160 houses flooded; more than 30 homes damaged or destroyed; and 209 landslides, cutting off communities in eastern Tobago, including Delford, Kings Bay, Speyside, and Charlotteville. Fifty-three families had to be relocated from their homes, and three people lost their lives from this disaster.



### **III. Task 1: Bahamas Hurricane Recovery Program**

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## **2 Approach and Assistance Strategy**

Following preliminary assessments and discussions between USAID with Government of the Commonwealth of the Bahamas (GOB), it was agreed that PADCO would focus on constructing housing in the hardest hit communities of the Bahamas, targeting low-income populations. Given the limited housing solutions, only 19, that USAID funding (\$500,000) could provide for the Bahamas, USAID and GOB agreed that all housing would be constructed in West End, Grand Bahama to gain maximum impact on this low-income community.

### **2.1 Leveraging USAID Resources**

USAID leveraged their funding for the Bahamas reconstruction program by partnering with the GOB to share costs of housing construction. GOB paid for all construction materials, including their own hurricane reconstruction program, while PADCO contracted labor costs for construction and provided all management for the program.

By creating this partnership, the hurricane recovery programs of both governments were able to extend the reach of their recourses. PADCO also used the Bahamas Ministry of Housing (MoH) standard house designs for 1- and 2-bedroom houses to standardize the housing solutions provided to the beneficiaries. For each house design, the MoH had established fixed labor rates and standard bills of quantity. This allowed PADCO to 1) contract multiple builders at the same fixed rates; 2) provide hurricane resistant housing that meets GOB building standards and code; and 3) provide local contractors with a house design that was familiar to them and could be constructed well based on their previous experience.

### **2.2 Beneficiary Selection**

PADCO targeted low-income and vulnerable beneficiaries through this program. The selection of these beneficiaries was based on the following criteria:

- The property was occupied by the owner at the time of the hurricane;
- The owner did not have hurricane insurance coverage;
- The household has a weekly income of \$250.00 or less; and
- The owner has secure tenure.

These criteria were set by the MoH and the NEMA and were adopted by PADCO, as they captured the low-income and vulnerable populations USAID sought to assist.

To identify families or persons in the West End eligible for assistance based on these criteria, assessments were conducted by Technical Officers from the MoH and National Insurance and the Department of Social Services, with the assistance of the District Administrator, Counselors, the Ministry of Public Works, Royal Bahamas Police Force, the Department of Environmental Health Services, and others. Of the 57 possible beneficiaries that MoH/NEMA identified, 19 families considered in “urgent need” by the above committee were assigned to PADCO. The MoH/NEMA provided housing for as many as possible of the remaining families.

### **2.3 Contractor Selection**

PADCO commissioned the construction of the new homes through subcontracts with small- and medium-sized Grand Bahama-based contractors. To build on the extensive experience that the MoH has gathered

in subcontracting builders to construct their three standard 1-, 2-, and 3-bedroom affordable housing designs throughout Grand Bahama,<sup>1</sup> PADCO used the MoH subcontracting system. The key elements of this system include the following: 1) use of “market based” labor rates; 2) fixed-price labor-only contracts; 3) use of pre-qualified contractors; and 4) lottery of contracts (see Attachment E for further details of these elements). This system allowed USAID/PADCO to subcontract for labor only while the MoH provided all materials to our selected contractors for free.

## 2.4 Training and Public Awareness of Safer Construction

PADCO assessed the need to train construction workers in the formal and informal sectors in hurricane resistant construction techniques by consulting with MoH/NEMA, NGOs (e.g., Habitat for Humanity) and industry members. PADCO observed that the building control office in Grand Bahama is more effectively staffed and administrated than others in the region. From PADCO’s experience in the West End, it was apparent that building permits are strictly enforced and inspections conducted at set stages of construction—helping ensure that housing is constructed to the MoH building code. The common cause of building failure observed by PADCO staff is poor maintenance of housing structures and lack of mitigation measures by homeowners, such as proper house siting, construction on stilts, and preparations before storms (i.e., removing surrounding debris). PADCO therefore designed a seminar and pamphlet addressing these issues and provided it to beneficiaries of both the USAID and GOB hurricane recovery programs.

## 2.5 Bahamas Management

PADCO managed the reconstruction activities in the Bahamas with the following project staff.

- Brian English, Program Manager, was based in Jamaica and managed tendering and contract management.
- Colvin London, a CCN Project Manager, was based in the Bahamas and addressed the daily project management needs regarding contractor performance and schedules and interacted with GOB agencies and material suppliers.
- A West End community member provided temporary administrative support to help liaise with the community and beneficiaries.
- Short Term Technical Assistance as necessary, including Stephen Hodges, provided public education and training material on disaster mitigation.
- Joe Arington, Chief of Party, provided overall supervision of this task and team.

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<sup>1</sup> As of January 20, 2005, the MoH had issued approximately US\$1,070,465.00 in labor-only contracts in Eight Mile Rock, the neighboring community to West End. In the West End, US\$1,085,974.62 in labor-only contracts to rebuild 36 homes and repair others has been signed. Additionally, total cost of contracts signed in the East End area amounted to US\$478,596.00, representing labor cost only. From this experience, the MoH has established competitive “market rates” and familiarity with contractors’ performance in constructing their standard MoH house designs.

### 3 Results Achieved

Table 1: Results Indicators Task 1			
Indicators		Overall Target	Achieved
a.	No. damaged houses reconstructed (gender disaggregated by head of household)	19	19 (F: 9; M: 10)
b.	No. communities benefiting from new housing	1	1
c.	No. people benefiting from new housing (disaggregated by gender) Direct Beneficiaries (HH occupants) Indirect Beneficiaries (HH dependence)	90	83 (F:49; M:34) 54 29
d.	No. of people informed of low-cost, hurricane resistant construction/maintenance techniques:	50	50

#### 3.1 Number of Damaged Houses Reconstructed

PADCO subcontracted four contractors to construct 19 houses in West End, Grand Bahama. This included and four 1-bedroom houses and 15 2-bedroom houses. All contractors were based in Grand Bahama. They included West End Building Company, KLF Construction, Walkins Construction, and Moses Wilson.

#### 3.2 Number of Communities Benefiting from New Housing

PADCO constructed housing in only one low-income community of the Bahamas, West End, Grand Bahama. This was one of the communities hardest hit by Hurricanes Jeanne and Frances in the Bahamas.

#### 3.3 Number of People Benefiting from New Housing

A total of 83 people will benefit the 19 houses. Fifty-four people will occupy the houses and 29 dependents of the families will also benefit. Nine of these households are female-headed, and 10 are male-headed.

#### 3.4 Number of People Informed of Hurricane Resistant Construction/Maintenance Techniques

The New Homeowner Disaster Preparedness Seminar was conducted on February 8, 2006 and geared for the new

home owners of the USAID reconstruction program. It addressed disaster preparedness issued specific to the Bahamas, including:

- How hazards become disasters;
- How to mitigate disasters by a) design, b) actions beforehand, and c) maintenance; and



Above: A home damaged by Hurricane Jean and Frances and replaced by PADCO.



Above & Below: PADCO constructed the houses on stilts to mitigate against future storm surge in this low lying community.

- How to properly extend one's house.

Approximately 50 people attended the housing training seminar on February 8, 2006. Approximately half were beneficiaries of the USAID program and half were from the community at large or beneficiaries of the Bahamas MoH/NEMA program. All USAID beneficiary households received PADCO's brochures explaining the safe building features of the homes PADCO constructed for them.

### 3.5 Exogenous Conditions and Events Affecting Implementation

#### 3.5.1 Hurricane Wilma

After accelerating over Florida in five hours, Hurricane Wilma moved into the Atlantic and regained category 3 status, as the eye of the storm skirted north of Grand Bahama Island on Monday afternoon, October 24, 2005. Winds of 110 mph, heavy rains and storm surge caused extensive flooding and structural damage to the low lying island of Grand Bahama.

*Material Supply.* Demand by homeowners and contractors for construction materials increased on the island as they repaired and rebuilt hurricane-damaged homes and buildings. As a result, PADCO's contractors experienced some material shortages that delayed construction schedules.

*Infrastructure for Operations.* The West End lost power following the hurricane and did not regain power for the duration of the USAID program there. In the absence of electricity, contractors required generators to power their tools. This increased operating costs as contractors had to purchase gas for these generators. PADCO absorbed these costs by issuing change orders. Lack of telephone landlines and cell phones in West End also hindered coordination of activities.

*Physical Damage to Sites.* Flooding was the main impediment to construction activities on four sites which remained under water for weeks after the hurricane. After observing the high water marks from the hurricane, PADCO raised the stilt heights of the low lying houses as a mitigation measure for future storms. This also increased costs of construction for PADCO.

#### 3.5.2 Gaining GOB Commitment to USAID/GOB Cost Sharing Plan

As stated above, during preliminary meetings between USAID and GOB it was agreed that a cost sharing plan would be pursued to extend the impact of both programs. However, securing the commitment of the GOB to move beyond "expressed" endorsement of this plan to active implementation was the biggest obstacle to moving the Bahamas reconstruction program forward in a timely manner.



Above: A standard 1-bedroom house contracted by PADCO.



Above: A family salvages belongings from their home in Eight Mile Rock, a community neighboring West End.



Above: Flooding on the low lying island of Grand Bahama. Also visible is the beach completely eroded by storm surge.



PADCO sought this commitment and action from the chief administrator of the MoH/NEMA Hurricane Recovery Program without success. Only after securing a meeting with the Minister and Permanent Secretary of Housing and National Insurance was the action required by the agencies' staff granted to move forward. It was only at the Minister level that the necessary budgetary decisions could be made to purchase the material for the program. The Minister subsequently mobilized procurement staff and directed the Grand Bahama MoH/NEMA director to coordinate with PADCO to implement this arrangement.

Gaining this commitment and action from the Minister required a coordinated effort from both PADCO and USAID management staff to address both the technical and political elements of this issue. In the end, this cost-sharing plan enabled USAID/PADCO to construct eight more houses than we would have been able to if we had funded both labor and materials for construction.

## **4 Lessons Learned - Program Design and Management**

### **4.1 Cost Sharing as Win-Win Approach for Partnering Governments**

The costs and benefits of integrating resources between different parties to complete physical construction project such as in the Bahamas posed many risks to the parties involved, including timely completion of tasks; commitment and reliability of parties; and level of professionalism affecting quality. As stated above, securing the commitment of the GOB to follow through with this plan delayed the program's implementation schedule. Further, management of multiple parties on such projects can be cumbersome. However, when weighed against these costs, the partnership between the GOB and USAID allowed approximately eight more houses to be constructed than if USAID funded both the labor and material alone. In addition to this, there were a number of other benefits realized by this strategy:

- The GOB was a part owner of the works and therefore contributed the political and technical support to make it a success.
- PADCO experienced significant benefits by working closely with the Bahamas MoH, particularly housing designs and knowledge of past performance on local contractors and suppliers and selection of beneficiaries.
- PADCO complimented the Bahamas MoH/NEMA Hurricane Recovery Program, contributing to their larger program of assistance.

### **4.2 Set Market Rates and Lottery System as Quick Method of Awarding Subcontracts**

As explained above, PADCO tendered the subcontracts for the construction of homes in Grand Bahama to MoH-licensed contractors at fixed-price labor-only contracts. The selection process was conducted by lottery, with contractors' names drawn blindly by the selection committee. Within the short timeframe of this USAID reconstruction programs (originally nine months), it was important to find a rapid, transparent method of tendering and awarding contracts so construction could complete within these time constraints. By establishing fixed-rates for labor and awarding subcontracts through a lottery, PADCO was able to meet this challenge.

The advantages of using the fixed-rate and lottery system were as follows:

- PADCO did not undermine (out-compete) the MoH system;
- PADCO was able to move quickly in selecting contractors;
- PADCO was able to select multiple contractors at one time to complete work simultaneously; and
- Contractors' rates did not vary and PADCO was not locked into selecting the lowest bidder. Under the lowest bidder selection, once a lowest bidder is contracted and occupied with construction (and

therefore not bidding again), the next lowest bid on the next tender is almost guaranteed to be higher. Therefore, the cost of construction is likely to increase with each successive tender.

This approach ensured speed, equity, and efficiency in the mobilization and effective engagement of contractors to complete the work.

#### **4.3 Ensure Management Continuity for Swift, Coordinated Implementation**

Over the duration of this USAID Program, USAID management assigned four CTOs at separate times to manage this program. This was due to staff turnover and changes in staff assignments. While all CTO inputs contributed positively to this program's implementation, this turnover, at times, inhibited a consistent and active partnership between PADCO and USAID in addressing program management issues. In particular, this partnership was most important in addressing: a) the implementation details of the USAID/GOB cost sharing plan, and b) the definitive USAID decision on how funding would be used to assist NEMA Tobago with the CERT program (discussed further below). In addressing these issues, USAID spoke on behalf of the Mission's policy and PADCO spoke to the implementation details. Without this coordinated effort, negotiations such as these cannot be resolved as quickly as possible. This partnership should be considered in future USAID programs to ensure swift, coordinated implementation of programs.



Left: Ambassador Rood with some of the beneficiaries of the Hurricane Reconstruction Program at the Christmas hand-over ceremony.

## **IV. Task 2: Tobago Hurricane Recovery Program**

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### **5 Approach and Assistance Strategy**

Following preliminary assessments and discussions between USAID with the Government of the GOB, it was agreed that USAID program resources would be focused on land stabilization as a top priority in Tobago. As a second priority, USAID agreed to dedicate program resources to training and equipping CERTs being organized by NEMA Tobago.

#### **5.1 Hillside Stabilization**

Following the heavy rainfall during Ivan and subsequent rainstorms on November 12, 2004, there was and still is a significant need for hillside stabilization in Tobago. A report from Geotech Associates, December 15, 2004, commissioned by NEMA, identified 54 areas of major damage due to flooding and mudslides caused by the significant rainfall on November 12, 2004. This report recommended short-term remedial measures, estimated at TT\$5.6 million (US\$0.9m), to stabilize the affected areas and minimize the potential negative effect of future rainfall.

Major remediation requirements for 14 project sites along the main road connecting Scarborough and Speyside were estimated by the Division of Infrastructure and Public Utilities (DIPU) at TT\$ 271.6 million (US\$45.2m). Six of these projects are considered highest priority and estimated at TT\$ 95.4 million (US\$15.9m). At the onset of this USAID program, detailed designs had only been completed by DIPU for one project, Big Hole-Good Wood Area, estimated at TT\$ 2.4 million (US\$400,000).

PADCO agreed with DIPU to subcontract the construction of three retaining walls in the Big Hole-Good Wood area, Big Hole #1 and Big Hole #2 (two Gabion basket retaining walls) and Good Wood (a concrete retaining wall).

Cleanup of hillsides in and adjacent to the slide areas had been inadequate since the said storm, with substantial debris, fallen trees, and dead foliage along the slopes. This fact, along with the lack of effective immediate action to design and implement required physical works, suggested the distinct possibility of both major and minor road closures during future rainy seasons.

The retaining walls that PADCO constructed remedied this risk in the Big Hole-Good Wood Area and will help ensure that this life line remains passable throughout future severe weather events. This will ensure that emergency services can reach the remote communities on the eastern end of the island and that the 15,000 people that use this road on any given day can continue to conduct their business as usual.

#### **5.2 Community Emergency Response Teams**

As high priority, and as part of a planned island-wide effort, the Tobago NEMA is organizing and equipping CERTs to be stationed in three remote communities of Tobago, including Parlatuvier, Delaford, and Speyside.

The CERTs program in Tobago will train persons to be better prepared to respond to an emergency situation in their communities. When emergencies occur, CERT technicians will give critical support to first responders, provide immediate assistance to victims, and organize spontaneous volunteers at a disaster site. CERT members will also help with non-emergency projects that help improve the safety of the community and mitigate future risks

During natural or man-made disaster the immediate response capabilities of the island (e.g., fire, police, and ambulance) can be overwhelmed or delayed. The CERTs will augment these capabilities.

While CERT teams have been organized in many parts of the world, the CERT “Career Concept” is being pioneered by NEMA Tobago. The NEMA CERT members will be paid as full-time staff following the completion of their training. These employed teams will create more reliable response organizations than traditional volunteer groups, though a CERT volunteer arm is attached to each team and will provide further auxiliary support to the operations of each team.

NEMA designed a training program for the CERTs in conjunction with the Tobago Fire Department, military, Red Cross, and others, to ensure that they have the necessary skills to respond immediately after natural disasters and other community emergencies.

PADCO worked closely with NEMA to support them in organizing and implementing the skills training for these CERT teams. The USAID funded training courses included:

- Basic cardiac life support
- Disaster management communication
- Water rescue
- High angle rescue
- Incidental command
- Light tool and equipment training

NEMA funded additional training courses, including emergency medical technician, mass casualty management, and fire suppression.

PADCO also supported this program by procuring two “Bobcat” front-end skid-steer loaders to equip the CERT teams with the capability to clear landslides, fallen trees, and transport relief supplies within their communities. NEMA has procured a third Bobcat loader and additional equipment for the CERTs including: boats, multi-purpose utility vehicles, and other search and rescue equipment.

### **5.2.1 CERT Participant Selection and Employment**

NEMA Tobago recruited the participants of the CERT Program through campaigns on the radio, television and newspapers, which PADCO helped fund. Candidates were required to meet a number of qualifications and experiences to qualify for the positions (see Attachment F for description). Participants were also required to sign an employment contract with NEMA Tobago that commits them to three years on the CERT teams. If they fail to meet this commitment they are required to pay back the cost of the training.

The CERT participants will be hired on a full-time basis by NEMA after the completion of the CERT training. They will be posted in one of three CERT centers in the communities of Delaford, Speyside, and Parlatuvier where buildings are constructed or are being constructed to house emergency response equipment, including the Bobcat front-end loaders. In addition to emergency response, the CERTs will also utilize their time by conducting community surveys on local hazards and health profiles to make their communities safer and be better prepared for emergencies. This information will be logged in a central database system, Emergency Management 2000 (EM/2000). EM/2000™ is used as a database and decision-making tool to address all four phases of the emergency management cycle preparation, mitigation, response and recovery. It enables users to produce incident recording, situation reports, Damage Assessment & Needs Analysis, message tracking, and resource management, among other things. (See Attachment G for more information).



NEMA Tobago is the only disaster management office in the English-speaking Caribbean that utilizes this technology. They utilized this software for Hurricane Ivan, both the severe weather events of November 2004 and January 2005, and Hurricane Emily.

### 5.3 Tobago Management

PADCO managed the projects in Tobago with the following project staff.

- Brian English, Program Manager, was based in Jamaica and managed tendering and contract management.
- Earl Williams, a Cooperating Country National (CCN) Project Manager, was based in Trinidad and commuted to Tobago to address project management needs regarding contractor performance and schedules and interacted with Government of Trinidad and Tobago (GOTT) counterpart agencies.
- Al Kerr, a CCN Clerk of Works, provided daily project monitoring of labor, materials and equipment on construction sites.
- Short Term Technical Assistance as necessary, including administrative support for NEMA to bolster their management capacity to organize the training events and a Surveyor to establish survey points for the construction projects.
- Joe Arington, Chief of Party, provided overall supervision of this task and team.

## 6 Results Achieved

Table 2: Results Indicators Task 3			
Indicators		Overall Target	Achieved
a.	No. hillside stabilization projects completed:	3	3
b.	No. communities benefiting from hillside stabilization:	1	1
c.	No. people benefiting from income generation activities: (disaggregated by gender)	20	22 (F: 3; M: 19)
d.	No. people benefiting from CERT training: (disaggregated by gender)	40	38 (F: 16; M: 22)
e.	No. communities benefiting from CERTs equipment and training:	3	3

### 6.1 Number of Hillside Stabilization Projects Completed

PADCO subcontracted two contractors to construct three retaining walls in the Big Hole-Goodwood Area along the Windward Road. AM Transport constructed two Gabion Basket retaining walls and PR Contracting Ltd constructed one concrete retaining wall.

### 6.2 Number of Communities Benefiting from Hillside Stabilization

Although the retaining walls were only constructed in one area along the Windward Road, Big Hole-Goodwood, they will benefit a number of communities that live beyond these points by keeping the road in this area passable. Approximately 15,000 people pass on this road



Above: Good Wood Concrete Retaining construction.

every day; it is the main east-west road along the south of the island to Scarborough, the capital of Tobago.

### 6.3 Number People Benefiting from Income Generation Activities

Both of PADCO's subcontractors to complete the retaining walls in Tobago were local Trinidad and Tobago contractors that used local labor. To construct the Big Hole retaining walls, AM Transport employed 11 people (nine men, two women). These staff were utilized for approximately five weeks in constructing Big Hole # 1 and five weeks in constructing Big Hole #2. PR Contracting employed approximately seven people (one woman, six men) over a 5-month period.

### 6.4 Number of People Benefiting from Community Emergency Response Training

PADCO issued a grant to Riaccom Inc. to complete the training courses for the CERTs. Fifty CERT members were selected and commenced the training in early December, 2005. Twelve of these participants quit the program within two months of commencing, leaving the final number of 38

CERT members. The gender break down of the CERT participants is 16 female and 22 male. Training courses included the following:

- Basic cardiac life support
- Disaster management communication
- Water rescue
- High angle rescue
- Incidental command
- Light tool and equipment training

Details of the course curriculums can be found in Attachment G.

### 6.5 Number Communities Benefiting from CERTs Equipment and Training

The three communities benefiting from the CERT Program, Delaford, Speyside, and Parlatuvier, will have the skills and equipment to help themselves in the event of future natural disasters and emergencies, making them less reliant on centralized emergency response services in Scarborough that are often stretched thin during times of emergency. The two Bobcats skid-steer front-end loaders procured from Sant's Equipment and Rental Ltd. are fitted with three attachments each—pallet forks, buckets, and grapples. This equipment will enable CERT teams to clear landslides (with bucket), remove fallen trees (with grapple), and transport relief supplies (with pallet forks) within their communities. (See Attachment G for details of training courses.)



Above: Good Wood Concrete Retaining wall complete.



Above: Big Hole #2 Gabion Basket Retaining Wall construction.



Above: Big Hole #1 Gabion Basket Retaining Wall complete.

## 6.6 Exogenous Conditions and Events Affecting Implementation

### 6.6.1 Hurricane Emily and Other Weather Events

On the July 12, 2005 Tobago experienced intense winds and rain from the passing of Tropical Storm Emily resulting in damage to roofs, fallen trees, downed utility lines, and some land slides. NEMA Tobago estimated that total public loss at TT\$1,100,000 (US\$180,328). This incident forced PADCO to postpone its bid opening for a tendered subcontract to complete a retaining wall. Additionally, NEMA reprogrammed some of its financial resources (TT\$580,955.00) to mobilize relief materials and assistance to the affected villages of Tobago. This also contributed to NEMA's delays in implementing the CERT training program with PADCO.



Above: Bobcat operations training for CERTs.

On December 17, 2005 Tobago experienced heavy rains which caused excessive flooding in the area of the Big Hole #2 retaining wall project. The rains projecting from a nearby storm culvert impacted the foundation of the retaining wall. While significant damage was not incurred, repeated exposure to such forces would eventually compromise the integrity of the works. PADCO's staff documented the high water mark and drainage characteristics and subsequently issued a change order to complete the construction of drainage culvert to mitigate this hazard.



Above: Water rescue training for CERTs, one of many skill sets taught.

Hurricanes Wilma and Katrina delayed the delivery of the Bobcat front-end loaders to PADCO's supplier in Trinidad, Sants Equipment and Rental, by redirecting existing stock in the U.S. to consumers in damaged areas given priority by the supplier.

### 6.6.2 Other Donors Contributions to Success: United Nations Technical Staff at DIPU

PADCO implemented the construction of the retaining walls in close coordination with the DIPU—as these projects supported their strategic plan for the Windward Road Rehabilitation Program. PADCO project management staff worked closely with the technical staff of the DIPU. In this partnership, engineers assigned by the United Nations to DIPU significantly bolstered the capacity of the DIPU technical staff and made noteworthy contributions to the technical guidance of these construction projects. By coordinating with these DIPU staff, PADCO also facilitated involvement and ultimately ownership by DIPU of the physical works.

### 6.6.3 Unsynchronized Implementation Schedules of NEMA and USAID

PADCO was delayed in implementing the CERT Training program with NEMA. This was due to the following three reasons:

- There was not immediate agreement by NEMA, USAID, and PADCO on what the program funds set aside for the CERT program should be used for. Specifically, there was deliberation about whether funds should be used to procure front-end loaders or multi-purpose utility vehicles. This



negotiation delayed PADCO from moving forward with the tender and procurement of equipment and finalizing the remaining CERT program budget for training.

- NEMA’s schedule for implementing the CERT training program was not synchronized with the timeframe of this USAID program. While NEMA was committed to the “concept” of CERTs, they still had to lobby the Tobago House of Assembly (THA) to gain the funds and budget to employ the CERT participants after the training. Further, after gaining this financial backing NEMA had to work through the lengthy process of recruiting CERT participants, securing trainers and venues, and other preparations.
- NEMA was forced to divert its financial and human resources to respond to Tropical Storm Emily which hit Tobago on July 12, 2005 before strengthening to a hurricane and heading for Grenada. To mobilize relief materials and assistance, NEMA used resources set aside for the CERT program.

While all of these are legitimate delays and necessary steps in implementing a successful CERT program, it should be noted that the implementation schedules for NEMA and USAID’s programs were not synchronized from the onset. The USAID Caribbean Regional Community Revitalization Program had a deadline of December 31, 2005 while NEMA Tobago was not working under the same time constraint. As a result, throughout this program PADCO was continually urging NEMA to meet USAID deadlines, sometimes stressing this partnership. However, at the completion of this program both NEMA and PADCO can conclude that the funding, technical assistance and “buy-in” provided by this USAID program made significant contributions to jumpstarting and fast-tracking this CERT program.

## **7 Lessons Learned – Program Design and Management**

### **7.1 Synchronizing USAID Assistance with NEMA’s Implementation Schedule**

Upon completion of the USAID-supported CERT program, USAID’s assistance to NEMA should be considered a success. USAID’s assistance helped launch the CERT program and gain the long-term support from the THA to sustain the program. However, without an extension of this USAID program beyond the original December 31, 2005 deadline, USAID would not have been able to support the program because NEMA was not fully prepared to commence their CERT program within the 2005 timeframe. As stated above, when USAID originally agreed to provide assistance to NEMA’s CERT program, all the preparatory steps were not in place to quickly commence the agreed program of providing training, equipment, and mobilizing the CERTs to conduct hillside clean-ups. Namely, NEMA needed to lobby for and secure funding from THA to employ the CERT teams after the training completed and then recruit the CERT team members. These two critical steps were not completed at the time USAID agreed to support the NEMA. In future USAID programs with similar time constraints, USAID should consider the counterpart preparedness and capacity to implement a joint program such as this one.

### **7.2 USAID Assistance to NEMA helps Secure Long-term Support for Disaster Mitigation**

In light of the above lesson learned, it should also be noted that USAID’s show of support and financial assistance to the CERT program helped NEMA Tobago lobby the Tobago House of Assembly (THA) for further support and funding for their CERT program. Specifically, NEMA was able to secure funding from the THA to hire the CERT team members as full-time employees after the training was complete. This “buy-in” from the THA into the concept and practice of disaster mitigation is exactly the type of ownership that USAID seeks to support in governments throughout the region. Therefore, in addition to providing the immediate benefits of this program (i.e. training and equipment), USAID’s support to this CERT program also helped gain the host-country support necessary to sustain this program beyond the immediate-term.

### **7.3 Ensure Management Continuity for Swift, Definitive Action**

Also stated under the Lessons Learned in the “Bahamas” section of the report, it was important to maintain a coordinated effort between both PADCO and USAID management staff so that these partners spoke with one voice when negotiating with NEMA Tobago and expressing USAID’s terms of assistance. To do otherwise can cause delays in implementation.

## V. Task 3: Conferences Supported and Hosted

### 1 Approach and Assistance Strategy

This task focused on both supporting existing conferences and venues, and hosting a regional conference in partnership with OECS. Both were aimed at supporting Task 4: Disaster Mitigation Action Agenda.

By supporting existing conferences, USAID was able to assist regional initiatives addressing disaster mitigation and advocate their support for an “Action Agenda” in the region. The conferences supported by PADCO included:

- University of Technology (UTECH) “Built Environment Issues in Small Island States and Territories,” Kingston, Jamaica, August 3-5, 2005; and
- Jamaica Institute of Engineers, Mainstreaming Risk Reduction in Engineering, September 25-29, 2005.

PADCO supported OECS Environment and Sustainable Development Unit (ESDU) to host a Lessons Learned Conference to culminate the work PADCO completed with ESDU under their Disaster Response and Risk Reduction Programme. The primary objectives of the conference were to gather participants from nine OECS member states and from regional and international agencies to:

- Inform the participants of methods to integrate disaster mitigation initiatives into mainstream socio-economic and physical planning process;
- Identify success stories in community-based disaster management and other innovative approaches that have potential for replication in the OECS member countries. Three pilot projects that PADCO implemented with OECS ESDU in Antigua/Barbuda, Dominica, and St. Lucia (discussed under Task 4) were examined; and
- Identify ways that OECS, USAID, and other donors can support the replication of success stories and the operationalization of disaster mitigation policies and strategies.
- Support OECS member country representatives to develop provisional proposals to replicate successful approaches to disaster mitigation.

The conference focused primarily on community-based efforts to reduce the exposure of the poor and other vulnerable groups to natural disasters. The following three primary themes were examined:

- **Safe Construction:** Training and public education in disaster-resistant building techniques, and strengthening the performance of development control entities;
- **Settlement Planning and Development:** Developing the regulatory framework for physical planning, and reducing landslide and flood risk in low-income settlements; and
- **Economic Resilience:** Diversifying the national economic base, and enhancing the ability of low-income households to build stronger communities and rebound from natural disasters.

### 2 Results Achieved

Table 3: Results Indicators Task 3			
Indicators		Overall Target	Achieved
a.	Conferences supported	NA	2
b.	Conferences Hosted	1	1

## 2.1 Regional Conferences Supported

### University of Technology “Built Environment Issues in Small Island States and Territories” in Kingston, Jamaica, August 3-5, 2005

UTECH in Jamaica hosted an international conference on issues of the built environment in small island states, August 3-5, 2005. UTECH asked USAID/PADCO to support the costs of two sessions of this conference focusing on disaster mitigation and construction standards. The funding PADCO provided showed USAID’s support for this important initiative in the region and allowed PADCO to solicit and identify potential pilot projects in the region. PADCO’s Stephen Hodges made a presentation on promoting safer building practices in the informal housing sector. The presentation addressed the fundamental issues of informal housing and the lack of investment in proper mitigation measures in their housing construction.

A number of participants expressed interest in this agenda and later provided proposals for USAID to support. However, these proposals were not pursued because they were for projects in Jamaica only, where as USAID decided to focus its disaster mitigation program only in the Eastern Caribbean.

### Jamaica Institute of Engineers, Mainstreaming Risk Reduction in Engineering, September 25-29, 2005

PADCO provided funding for one night of the Jamaican Institute of Engineers Engineers’ Week Program. This program was held between September 25-29, 2005 and was focused on Mainstreaming Risk Reduction in Engineering. The Jamaica Institute of Engineers called for an immediate look at the risks associated with natural hazards and potential mitigation measures to reduce risk after the passage of Hurricanes Ivan, Dennis, and Emily which highlighted engineering vulnerabilities. As part of USAID’s interests in promoting vulnerability reduction, PADCO provided funding for one night of their events.

## 2.2 OECS-USAID “Lessons Learned” Conference

This conference was hosted in St. Lucia, February 16-17, 2006. Fifty-three people from all nine OECS member states participated in the conference and represented host governments departments involved in disaster mitigation including Physical Planning and Development, Disaster Management, Physical Works, Industry and Commerce, and local NGOs. International donors and regional organizations, including the Caribbean Disaster Emergency Response Agency (CDERA) and Caribbean Development Bank (CDB), also attended. Based on the above stated objectives of the conference, PADCO notes three primary results for each. (See Attachment H and I for participant list and summary of conference proceedings):

### (1) Inform the Participants of Methods to Integrate Disaster Mitigation Initiatives into Mainstream Socio-Economic and Physical Planning Process

The conference provided a number of presentations addressing this objective, including:

- Repositioning the Region to Increase Resilience to Disasters: Ms. Elizabeth Riley, CDERA;
- The Role and Expectations of the Private Sector in Disaster Management: Mr. Brian Louisy, St. Lucia Chamber of Commerce;
- Intergovernmental/Sectoral Cooperation: Mr. Julian Dubois, National Emergency Management Organization (NEMO), St. Lucia; Mr. Ivan Laughlin-Agency for Reconstruction and Development (ARD), Grenada; and Mr. Howie Prince, NEMO; and
- SVG Mainstreaming Disaster Mitigation into National Development Planning: Dr. Cassandra Rogers, CDB.

### (2) Identify Success Stories in Community-Based Disaster Management and other Innovative Approaches that have Potential for Replication in Other OECS Member Countries.

PADCO's implementing partners of the three pilot projects presented lessons learned from the execution of these projects. These included the following (see Task 4 for descriptions of these pilot projects):

- **St. Lucia Skate Town:** Mr. Joachim Henry, Poverty Reduction Fund (PRF), St. Lucia;
- **Dominica Fond Cole:** Ms. Claudine Roberts, Ministry of Local Government; and
- **Antigua Safer Building:** Mr. Paul Bacchus, National Development Foundation (NDF).

### **(3) Identify Ways That OECS, USAID and Other Donors Can Support the Replication of Success Stories and the Operationalization of Disaster Mitigation Policies and Strategies**

PADCO led a strategic planning exercise for the participants of the conference to work through in break-out sessions. This allowed the participants to actively think through a strategic planning process and structure interventions to address the development issues discussed in the conference such as informal housing and settlements, building standards, and the like. The participants of each country were paired with those having similar development issues and were asked to:

- Break up into working groups;
- Taking into account previous and/or ongoing planning exercises, define three objectives for disaster mitigation;
- Identify main interventions that can achieve the objectives;
- Quantify the results (1-year, 3-year and 5-year targets);
- Identify the executing agencies and implementing agencies for each intervention;
- Identify sources of funding for each intervention;
- Prioritize the objectives and interventions;
- Verify that interventions are implementable; eliminate those that are not; and
- Clarify assumptions.

During the second break-out session the groups were asked to:

- Identify strategies and measures for building political support for proposals;
- Identify ways to get the private sector involved in financing or implementation;
- Define steps for inserting actions into public sector programs; and
- Define steps for inserting actions into public sector budgets.

The outcomes of these break-out sessions helped OECS and USAID identify ways that they and other donors could support the replication of success stories and the operationalization of disaster mitigation policies and strategies. (See separate report for details of the break-out session outcomes: Lessons Learned Conference Final Report)

## **2.3 Exogenous Conditions and Events Affecting Implementation**

*See discussion under Task 4.*

## **3 Lessons Learned**

*See discussion under Task 4.*



## VI. Task 4: Disaster Mitigation Action Agenda and Pilot Projects

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### 1 Approach and Assistance Strategy

PADCO implemented three parallel activities under Task 4, discussed below:

1. Defining the technical Action Agenda;
2. Gathering support for the “Action Agenda” in the region; and
3. Demonstrating the Action Agenda through pilot projects.

#### 1.1 Defining the Technical “Action Agenda”

Through this activity, PADCO sought to identify agenda items that USAID could adopt into their 2005-2009 Caribbean Regional Strategy to reduce the risk of future loss from natural disasters in the region, particularly for the most vulnerable and low-income communities.

Significant damage to housing, agriculture, and public infrastructure (including schools, medical clinics, and community centers) in the 2004 hurricane season revealed the vulnerability of these assets in countries like Grenada. In response to this damage, USAID Mission management repeatedly expressed their concern that the region has failed to make the necessary investments in mitigation measures and too often looks to international donors to lend aid.

PADCO worked from the premise that major advances had already been made in understanding effective ways to identify and reduce risks from natural disasters and that the gap lies in public and private sector “action” and “ownership” to implement such measures.

While regional and national disaster management systems have grown stronger overall in the past decade, disaster preparedness and mitigation at the community level has not resulted in a substantial reduction of disaster risk for low-income communities. Safe construction initiatives have succeeded in improving building techniques, but many informal builders are still putting up un-reinforced structures with low resistance to natural shocks. On most islands, formal sector planning and development control systems are not sufficiently articulated to prevent the spread of squatter settlements to environmentally risky areas such as steep slopes and floodplains. And the economies of the region’s island states are still narrowly focused on a small number of sectors, some of which—agriculture and tourism—are highly vulnerable to natural disasters.

PADCO set out to build on this considerable body of technical knowledge and identify an agenda that meets the following criterion:

- **Strategic:** The agenda will identify strategic interventions at the local to regional level and across sectors to achieve the desired objectives. It will also identify opportunities for public/private partnerships.
- **Technically Progressive:** The agenda will build upon “best practices” and successes in the region to date.
- **Politically Viable:** The agenda will be politically viable in order to gain buy-in from senior policy and decision makers. It will also build upon current technical and political champions in the region to create “easy successes,” build momentum, and champion the cause in the region.
- **Leverages Resources:** The agenda will work in collaboration with other programs and agendas of bilateral donors, international finance institutions and regional institutions (including CDB, OECS, and CDERA) to leverage resources and support for an integrated regional agenda.

- **Achievable and Measurable:** The agenda items will be measurable and identify explicit milestones and benchmarks toward achieving the identified objectives.

## 1.2 Gathering Support for the “Action Agenda” in the Region

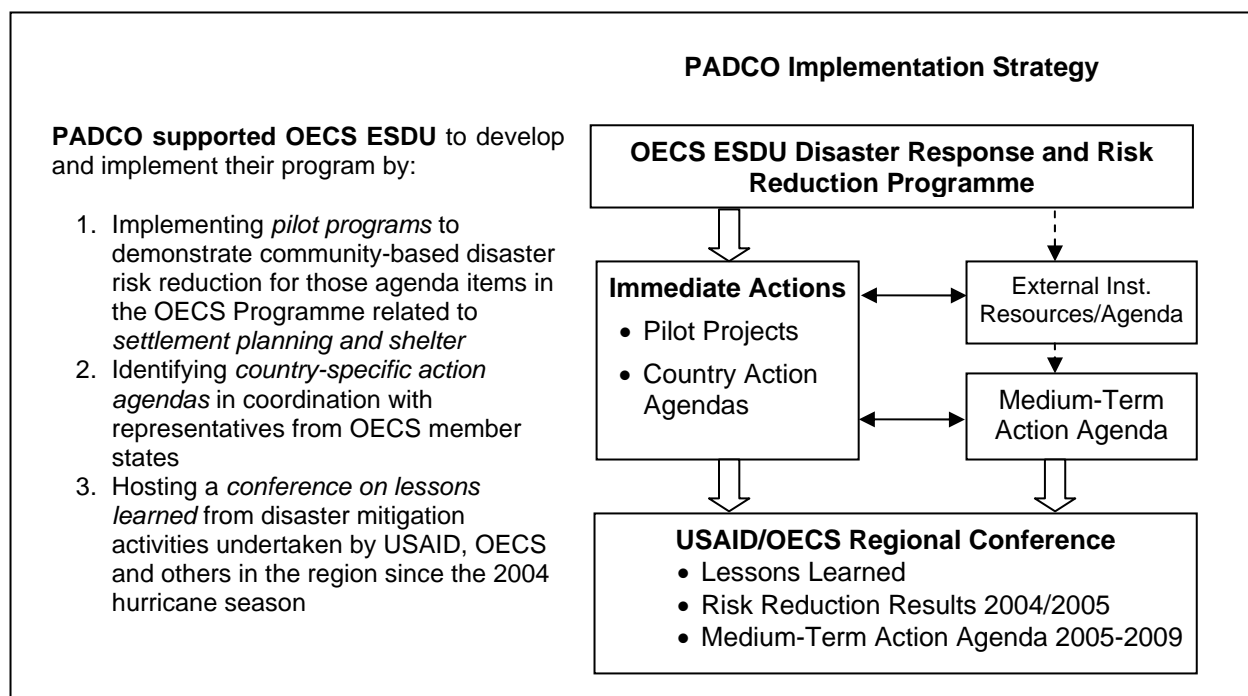
Through this activity, PADCO sought to work with OECS, national partners, and regional institutions to promote this agenda in the region and to attract the political backing necessary to support the agenda.

To create a viable disaster mitigation action agenda in the region, USAID decided to partner with the OECS as the political body to champion this agenda in the region. OECS was chosen over CARICOM as the unit showing more promise for action. This was partly demonstrated by Disaster Response and Risk Reduction Programme that the OECS ESDU put forward to the OECS Authorities in June 2005. The OECS Authorities endorsed this program and authorized the ESDU to pursue and mobilize donor funding to implement it.

This partnership between OECS and USAID defined PADCO’s scope of work for this task by limiting the focus of the Action Agenda to the nine OECS member states and by identifying the counterpart institution (i.e., ESDU) that PADCO would partner with to develop the agenda.

With the ESDU, PADCO sought input into the Action Agenda from member state government agencies responsible for disaster mitigation in their countries, including Disaster Management, Physical Planning and Development, Physical Works, Industry and Commerce. PADCO also sought input into the agenda from local NGOs and the private sector.

PADCO also solicited input into the Action Agenda from a number of key regional institutions working on or that have a mandate to address disaster mitigation in the Caribbean, including CDERA, CDB, and U.S. Office of Foreign Disaster Assistance. PADCO solicited input from these organizations into the Action Agenda.



### 1.3 Demonstrating the Action Agenda through Pilot Projects

To put the agenda into action, PADCO implemented a number of pilot projects to: 1) demonstrate physical risk reduction activities as part of the larger agenda that USAID and OECS might choose to endorse in the future; 2) engage host government agencies and stakeholders to rollout this action agenda beyond the immediate-term; and 3) take stock of lessons learned from these initiatives to create sustainable programs for the medium-term agenda. Each pilot project is community-based, action-oriented, and exhibits best practices.

Field work for the identification and selection of pilot projects was conducted over the period of September-December 2005 by PADCO in conjunction with ESDU. Assessment visits were made to Antigua/Barbuda, Dominica, St. Lucia, and St. Kitts where discussions were held with various government, private sector and NGOs. Proposals for five different pilot projects were gathered and three were selected by a committee of USAID, OECS, and PADCO staff. The pilot projects included:

- **In St. Lucia**, PADCO supported the PRF/ Management of Slope Stability in Communities (MoSSaiC) to complete their show case community in Star City/Skate Town, which demonstrates a holistic community-based approach to landslide risk reduction. The project mobilizes the community members (as employed workers and volunteers) to install low cost drainage, roof guttering and water storage tanks, and distributes public awareness materials.
- **In Dominica**, PADCO supported the roll-out of the above landslide risk reduction program by supporting the Department of Local Government and Community Development (DLGCD) to implement similar mitigation measures designed for the community of Fond Cole.
- **In Antigua**, PADCO supported the National Development Fund to implement a training course on hurricane resistant housing construction and retrofitting to local builders and carpenters. The program will also sensitize homeowners, particularly those interested in taking loans to retrofit their houses, to the benefits of employing safe building techniques and will distribute 1,000 copies of *A Manual for the Construction of Hurricane Resistant Homes in Antigua and Barbuda*.

These projects address two common risks experienced in low-income communities throughout the Caribbean region: a) inadequate housing construction to resist the forces of natural hazards, such as hurricanes, and; b) improper house siting and drainage on steep hillsides. Both increase the risk of house failure/collapse during a hurricane or severe weather event.

These three pilot projects presented the opportunity to engage three different types of organizations to implement such community-based programs: a government agency—the Dominica DLGCD; a quasi-government institution—the St. Lucia PRF; and a non-profit private institution—the Antigua/Barbuda NDF. Further, the Slope Stabilization project presented the opportunity to observe the same project being implemented in two islands using different implementation modalities. These differences allowed USAID and OECS to draw lessons from partners' approaches to implementation; solutions they employed to common problems; and partnerships they created in each country (e.g., between public and private sectors and with community-based groups).

## 2 Results Achieved

Table 4: Results Indicators Task 4			
Indicators		Overall Target	Achieved
a.	Action agenda items identified and defined	1 to 5	3
b.	Gathering Support for the Action Agenda	NA	NA

## 2.1 Defining the Technical “Action Agenda”

PADCO identified three thematic areas to address in this agenda based on vulnerability in the region and the interests of the OECS ESDU outlined in their Disaster Response and Risk Reduction Programme.

- Safe construction;
- Settlement planning and development; and
- Economic resilience.

The Action Agenda aims to reduce the risk of natural disasters, particularly for the most vulnerable and low-income communities, by providing a sustainable platform for the region’s development through intervention in these three thematic areas.

The Action Agenda defines specific activities to be carried out with counterpart agencies and implementing partners in each of these thematic areas. The Agenda has been prepared in close collaboration with counterparts, which contributed to the formulation and refinement of specific proposals through exchanges with USAID and its contractor and through participation in the February 2006 OECS Lessons Learned Conference.

The agenda seeks to accelerate the pace and improve the effectiveness of disaster mitigation efforts by: doing the following:

- Building on recent success stories in community-based and other innovative approaches to disaster mitigation financed by USAID and others; and
- Operationalizing existing national disaster mitigation policies through regulatory development and institutional strengthening.

The Action Agenda focuses initially on six OECS member countries, Grenada, Antigua and Barbuda, St. Lucia, St. Kitts, Nevis, Dominica, St. Vincent, and the Grenadines. Other Caribbean nations may be included in the Agenda at a later date.

The Action Agenda also seeks to contribute to the achievement of USAID/J-CAR’s goals under the Trade and Investment Strategic Objective of the 2005-2009 Caribbean Regional Strategy. The activities defined under the economic resilience theme are most applicable to this SO.

See the PADCO deliverable, *USAID/J-CAR Disaster Mitigation Action Agenda 2006–2009* for the specifics of the agenda. Sections 2-4 of the Agenda identify specific initiatives and actions in each of the three main thematic areas. Section 5 sets out the proposed framework for performance monitoring and evaluation of the Action Agenda. An implementation plan showing responsible counterpart entities and timelines is attached at the end of the document.

## 2.2 Gathering Support for the “Action Agenda” in the Region

PADCO worked closely with OECS, the host-country implementing partners, and regional institutions to promote this agenda in the region and to attract the political backing necessary to support the agenda. Although it is a difficult target to measure, a number of successful outcomes and lessons learned can be reported from this activity.

**Regional Support** - The community-based disaster mitigation programs advocated by the Agenda are supported by CDERA which is also involved in similar activities. Discussions with CDERA indicate that that agency sees the agenda as providing several opportunities for collaboration between the three entities—USAID, OECS ESDU, and CDERA. The CDB program to support mainstreaming of disaster

mitigation into the development process also shares many common goals and opportunities for collaboration.

**Sub-Regional Support** - Supported by the various disaster offices within the sub-region, the agenda was publicly endorsed by them at the Lessons Learned Conference held in St. Lucia in February. This general acceptance was furthered at the conference by the target countries' efforts to develop national disaster mitigation projects based on the proposed OECS ESDU program.

**National Support** - At the national level in Antigua/Barbuda the Development Control Authority succeeded in securing a commitment from the responsible minister to strengthen the staff complement of their department to carry out building inspections. This commitment was advocated for during the implementation of the Antigua/ Barbuda pilot project. The government of St. Lucia has also earmarked funds to continue the slope stabilization project with the PRF and MoSSaic.

**Political Support** - The Disaster Response and Risk Reduction program of the OECS ESDU is supported at the political level by the OECS Authorities which was endorsed in June, 2005. However, this endorsement must go beyond "expressed" endorsement to create a true "action agenda." USAID and OECS must now move the agenda forward by seeking support at the ministerial level. A tentative program for garnering this support is presented under Lessons Learned "Obtaining Political Buy-In."

## 2.3 Demonstrating the Action Agenda through Pilot Projects

Table 5: Results Indicators Task 4			
Indicators		Overall Target	Achieved
c.	<b>Pilot project:</b>	3	3
c1.	<b>St. Lucia</b>		
	a) No. of HH benefiting from reduced risk of landslides: (total people disaggregated by gender)	50	60 (F: 105; M: 75)
	b) No. of people employed by development project: (total people disaggregated by gender)	NA	25 (F: 3; M: 22)
c2.	<b>Dominica</b>		
	a) No. of HH benefiting from reduced risk of landslides: (total people disaggregated by gender)	30	25 (F: 56; M: 14)
	b) No. of people employed by development project: (total people disaggregated by gender)	NA	33 (F: 2; M: 31)
c3.	<b>Antigua</b>		
	a) No. of contractors trained in safer construction techniques; (total people disaggregated by gender)	30	65 (F: 16; M: 49)
	b) No. of homeowners better informed of safer construction techniques. (total people disaggregated by gender)	NA	288 (F: 206; M: 82)

PADCO implemented pilot projects in St. Lucia, Dominica and Antigua. Each project demonstrated physical risk reduction activities that USAID and OECS have shown interest in addressing in the future; engaged host government agencies and stakeholders in dialogue about rolling-out the interventions beyond the immediate-term of this USAID program; and developed lessons for successfully replicating these projects in the medium-term agenda. Descriptions of each follow.



### 2.3.1 Poverty Reduction Fund and MoSSaiC, St. Lucia

PADCO provided a grant to the St. Lucia Poverty Reduction Fund (PRF) to complete a disaster mitigation/community development pilot project in Star City/Skate Town, St. Lucia. The overall objectives of the program were to reduce the real and present risk of landslides, improve living conditions and upgrade the basic community infrastructure within the Skate-Town and Star-City communities by installing low-cost improvements to slope drainage in collaboration with the community. Specific activities included the following:

- Defining a detailed zonation map, with assistance from community members, to implement appropriate low-cost drainage interventions;
- Design and implementation of low-cost “STAR” secondary drains for 23 houses in Star City/Skate Town;
- Construction of major drains using *in situ* reinforced concrete and concrete block systems;
- Completing the provision of roof drainage and down pipes for 23 properties;
- Installation of 10 household water tanks; and
- Distributing related public awareness materials.

Sixty households directly benefited from the intervention by improvements made to drainage systems in the community. The project was implemented using a community participation approach. A Community Project Committee took responsibility for mobilization of the residents and other community-based resources.

Twenty-five residents were employed on the project, thereby generating local income and building local skill sets. In addition, three private contracts were let for physical works and services. Some materials were procured directly by the PRF, which took the responsibility of the overall management of the project.

USAID/PADCO’s investment in this project mainly helped to *complete* the above set of interventions which were previously initiated by PRF/MoSSaiC so this community could serve as a model for future replication. The PRF and MoSSaiC team have been working with a multi-sectoral/ministerial committee to advocate for similar programs in other informal settlements in St. Lucia. They have secured funding to replicate this program in four other communities in St. Lucia.

PRF, as a quasi-government agency, was an effective implementation partner for this exercise. Their administration of this project was quick and flexible and they were able to achieve the outcomes of this program over a relatively 3-month period of time with only a modest investment (US\$50,000). Further, they take a holistic approach to community development by:

- Ensuring community participation from inception for ownership and sustainability



Above: A public awareness brochure of a “model home” retrofitted by the community as part of the PRF/MoSSaiC project. It explains proper installation of roof guttering and drainage pipes leading to the “STAR drains” and main drains.



Above: The “STAR drains” system developed by MoSSaiC provides low-cost temporary drainage from house gutters and waste pipes to main drains. This intervention reduces water inputs into surrounding soil which can saturate soils and increase landslide risks.

- Building and/or strengthening capacity of community organizations for advocacy, decision-making, and management; and
- Identifying critical social problems and issues (building human resources and social capital).

The MoSSaiC team (a professor and PhD student from University of Bristol, UK) has made significant technical contributions to this management team and without them the interventions would likely not be as strategic. While the community members make significant contributions to local understanding of typical drainage paths, the MoSSaiC team helps designate (apolitically) where drainage systems should be constructed based on likelihood of landslides, a technical skill.



Above: MoSSaiC and PRF staff work with community members to identify drainage issues. Their observations are recorded on a community map.

### 2.3.2 Local Government and Community Development/ MoSSaiC, Dominica

PADCO subcontracted the Dominica DLGCD to roll-out the above St. Lucia project in Fond Cole, Dominica. The demographics and topography of the Fond Cole community are very similar that of Skate Town/Star City in St. Lucia. Specific activities of this project included the following:

- Development of a detailed zonation map, with assistance from community members, to implement appropriate low-cost drainage interventions;
- Design and implementation of low-cost “STAR” drains; and
- Commencement of the provision of main drain construction that the above STAR drains could tie into.

Twenty-five households were direct beneficiaries of the intervention through improvement made to their surface drainage systems. Physical works were completed through three subcontracts issued by the DLGCD and coordinated with the local Fond Cole Community Committee which mobilized and employed this 33 residents on this project.

The DLGCD has also begun to coordinate a multi-sectoral/ministerial committee, similar to that convened in St. Lucia, to address these issues in Dominica. Though only beginning, it is hoped that the results of this intervention will demonstrate the benefits of these low-cost interventions and gain commitment for further roll-out in Dominica. Programming such activities into the public sector budget rather than maintaining these activities with



Above: The steep hillside that Fond Cole has developed on, in close proximity to the Capital, Roseau.



Above: A steep, unpaved footpath in the settlement of Fond Cole. There are no roads in this community, only footpaths such as this.



international donor funds will be the challenge in the medium-term.

The success of this program helps reinforce the benefits of this community-based approach also demonstrated in St. Lucia.

### 2.3.3 Antigua/Barbuda Safer Building Training and Manual

PADCO provided a grant to the NDF to conduct workshops on safe construction measures in Antigua and Barbuda. The overall objective of the program was to improve the standard and safety of houses in Antigua and Barbuda. To meet this objective, the NDF completed the following activities:

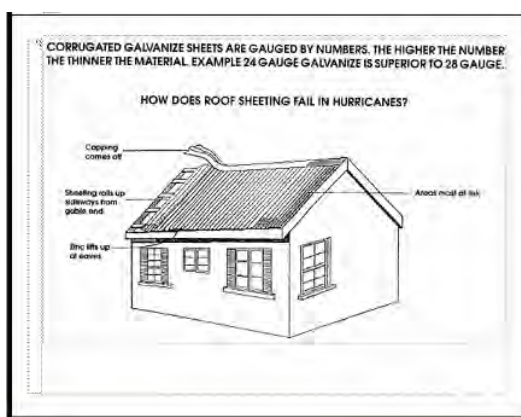
- Trained 65 local builders and carpenters in safe construction and retrofitting techniques;
- Sensitized 288 present and potential house owners of the benefits of employing safe building techniques;
- Exposed public officers from the Development Control Authority and those certified to approve construction works to this training and sensitization;
- Placed two officers in an outreach program, to provide on site advice in safe building techniques to carpenters and builders who may be carrying out repairs, retrofitting or building small houses for low-income families; and
- Distributed 1,000 copies of *A Manual for the Construction of Hurricane Resistant Homes in Antigua and Barbuda*.

NDF worked with other agencies (NODS, Red Cross, DCA, and Gender Affairs Division & Contractors Association) involved in disaster mitigation to ensure support and buy-in from relevant public sector agencies. These partnerships proved very successful and have led to a commitment of resources from the Minister of Housing to build the capacity of the DCA's staffing and vehicle fleet—a constraint voiced during planning meeting for this project. NDF has observed the following lessons learned from this pilot project:

- Homeowners and potential homeowners are willing to adhere to safe building techniques, but material cost is the primary obstacle.
- Contractors embraced the training sessions. They are concerned about CSME and want to be certified.
- Despite interventions such as this, statutory bodies must ensure buildings conform to Building Code.



Above: Star City/Skate Town residents mobilize to construct drains.



Above: Diagram from PADCO/NDF Safer Construction Manual. Below: Chattel homes in Antigua. Note how there is no tie between the superstructure and the ground—likely because of no title to land.





As a private sector, non-profit organization, NDF is driven by their client needs and securing their investments in their client base. Safer construction is in the interest of both the public and private sector, and this program has demonstrated the successful partnerships and interventions that can be developed around this issue.

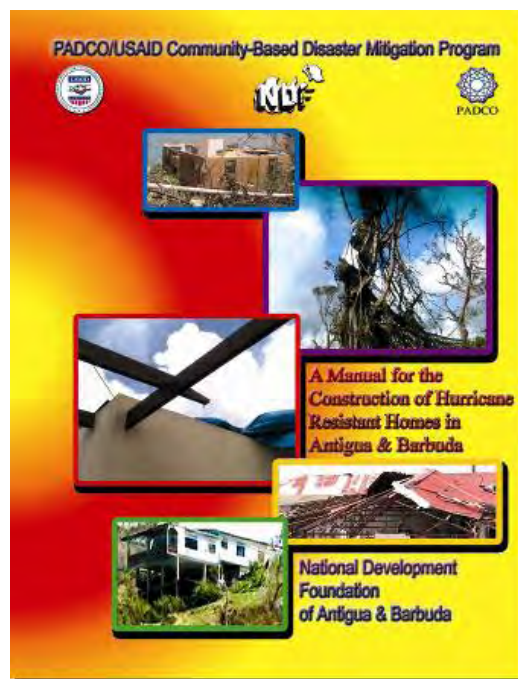
## 2.4 Exogenous Conditions and Events Affecting Implementation

### 2.4.1 Coordination of Implementing Partners: OECS, USAID, and PADCO

To effectively implement the activities under Tasks 3 and 4, close coordination was required between the three implementing partners—PADCO, OECS, and USAID—on this relatively new partnership formed between OECS and USAID to address disaster mitigation in the region. The broad parameters of the partnership between OECS and USAID were outlined in the Memorandum of Understanding, which these organizations signed, but the

specific institutional arrangements regarding the implementation of this program were not. This led to some unclear expectations on the part of OECS regarding, for example, who would control project funds

on both the captioned program and future programs. To correct this, PADCO completed a Work Plan between PADCO and OECS/ESDU which addressed this and other project management issues such as staffing, budget and schedule. PADCO recommends this and other tools such as Project Implementation Letters as effective means to clearly define expectations, roles and responsibilities of future partnerships.



Above: Cover of PADCO/NDF Safer Construction Manual produced under this pilot program—1,000 copies were produced for distribution to contractors and homeowners.

## 3 Lessons Learned – Program Design and Management

### 3.1 Inadequate Institutional Arrangement for Disaster Mitigation in Development Planning

Mitigation planning is relatively new in the Caribbean region which has, in the past, accepted the impact of disaster events as acts of God and therefore something that they were powerless against. Although this perception is changing, the systematic planning and mitigation of disasters has still not been fully integrated into the development planning process. The institutional arrangements must be in place for the effective implementation of disaster risk reduction measures in physical development projects.

These institutional arrangements should be reviewed and modified to make meaningful progress. This should include a review of legislation, inter-governmental collaboration, the streamlining of mitigation activities in the budget process and the identification of a lead agency to promote the integration of mitigation activities in the planning and development process.

### 3.2 Pilot Projects Demonstrate and Empower Community Mobilization and Ownership

The pilot projects conducted in Dominica and St. Lucia clearly demonstrated that communities are willing to unite around common issues in their communities and work together to resolve them. The experiences of implementing partners on the pilot projects offer insight on how community-based approaches, if

properly utilized, can be employed to benefit the long-term development interests. For example, it is possible to build on interests of community members to create a core of leaders who can be trained in project development, management, or proposal writing. Such a group can work with community residents to identify long-term projects and seek support from local agencies, thereby empowering them to resolve issues in their communities and take responsibility for their own welfare. These building blocks then enable communities to more effectively prepare for, respond to, and recover from disasters.

### 3.3 Obtaining Political Buy-in at the Regional Level

The completion of the Action Agenda and Lessons Learned Conference by PADCO has produced a strategic menu of mitigation measure that both USAID and OECS can address to help reduce the impact of natural disasters in the region. For the follow-on USAID program, the task at hand should be on addressing how to implement these agenda items—i.e., how to achieve the necessary inter-governmental collaboration, the political backing at the ministerial level, the streamlining of mitigation activities in the budget process, and the identification of a lead agency and committees to carry out these activities.

The speakers and participants at the Lessons Learned conference presented various approaches to move these issues forward. However, this was focused primarily on national actions and not on the development of a sub-regional consensus for supporting disaster mitigation activities at the OECS level.

In order to move beyond the national and institutional level to the ministerial level it will be necessary for the OECS to engage political leaders in discussions to ensure that the links between disasters and development are fully understood, and that leaders are willing to support sub-regional actions designed to reduce the vulnerability of the region to natural disasters.

In seeking to ensure political buy-in from OECS in the USAID follow-on program with Chemonics, the implementing agency should undertake the following activities.

- Conduct sensitization workshops on disaster management for Prime Ministers and senior officials in selected countries to increase their awareness of the links between national
- Actions or inactions and the increasing vulnerability of the region;
- Critically analyze the current development thrust of each country and the possible negative environmental impacts this is likely to have and identify corrective measures for addressing these problems while avoiding further actions that would endanger the population of the country and retard future economic growth; and
- Work with the national disaster office in each territory to create local technical working groups to develop concrete plans with achievable objectives to address the identified problems. Based on this analysis develop pilot projects and explore the following implementation issues:
  - Evaluate present institutional arrangements for carrying out the identified project based on local capacity, human, financial, legislative framework and history of inter-ministerial collaboration;
  - Identify structural adjustments necessary for successfully implementation;
  - Identify institutional arrangements for implementing the project;
  - Identify lead and support agencies.
  - Identify and mobilize financial and human resources, public and private; and
  - Address any other issues to achieve national implementation in the absence of external funding.

Proposed role of OECS:

- Convene meeting with Prime Minister and senior government officials and organize sensitization workshops to include the identification of resource persons;
- Liaise with national disaster offices to arrange local meetings with technical agencies;

- Chair in-country meetings;
- Establish sub-regional project monitoring committee to monitor project activities in each target country; and
- Provide regular project update to CDERA.

Proposed role of USAID Implementing Partner (Chemonics):

- Collaborate with the OECS in the carrying out of sensitization workshops and the analysis development trends;
- Provide technical support in the development of pilot projects and review of institutional implementing arrangements;
- In collaboration with OECS and host countries, implement project activities; and
- Provide monthly project updates to OECS.

### **3.4 Joint Government and NGO Activities**

The Antigua/Barbuda project involved the active collaboration of the Ministry of Works, the National Office of Disaster Services, the Ministry of Education and the NDF. The fact that all three ministries were willing to collaborate with an NDF augurs well for future activities since the support of the private sector will always be necessary to successfully implement disaster mitigation projects. This collaboration between the government and private sector, though limited, can serve as a vehicle for create other such partnerships in an attempt to reduce the often adversarial relationship which can exist between these groups.

The Antigua/Barbuda project focused on an issue which transcended private sector interest, the construction of safe buildings (i.e., housing units), and as such was able to bring both groups together. Using this as a model, other issues such as the transfer of risk or the effective use of hazard maps can be addressed by similar joint task forces and practical recommendations arrived at.

### **3.5 Breaking the Donor Dependency Syndrome**

Traditionally the Caribbean has always looked outside the region for the solution to its problems. This trend continues today with the various states continually seeking external assistance to solve internal problems and no where is this more evident than in the disaster management arena. Long regarded as a drain on the national budget rather than an asset in terms of the protection it offers to the nation, disaster management is often under funded or used to gain political patronage in the aftermath of a disaster. Based on the presentations at the St. Lucia Conference by both CDERA and the CDB this trend now appears to be changing as both institutions stressed the need for countries to be proactive in the disaster management field and identify ways in which disaster mitigation can be streamlined in the disaster management process. Both agencies also stressed that this should be done via the national budget and not through externally funded short term projects. The preparation of tools for accomplishing this streamlining by both the CDB and United Nations Development Programme (UNDP) offers an opportunity for USAID to support these agencies by ensuring that the message is spread throughout the region.

## VII. Financial Summary of the Program

### Caribbean Regional Community Revitalization and Disaster Mitigation Program

#### Summary of PADCO Subcontracts and Grants

USAID Contract #: EPP-I00-04-00026-00

Task Order: EPP-I01-04-00026-00

Report Date: March 13, 2006

Subcontracts				
Subcontract #	Subcontractor	Location	Project	Value (USD)
0330-803-H001	KFL Construction	Bahamas	1 one-bed & 4 two-bed houses	\$ 98,243.00
0330-803-H002	Walkins Construction	Bahamas	2 one-bed & 3 two-bed houses	\$ 92,976.00
0330-803-H003	Moses Wilson	Bahamas	4 two-bed houses	\$ 86,508.00
0330-803-H004	WEBCO	Bahamas	1 one-bed & 4 two-bed houses	\$ 98,243.00
	Freeport Concrete	Bahamas	Concrete for Stilts (19 houses)	\$20,291.00
	Delancy Drilling	Bahamas	Drilling of Ground Wells (19)	\$18,525.00
<b>Subtotal Bahamas</b>				<b>\$414,786.00</b>
0330-803-W001	P.R. Contracting Ltd.	Tobago	Good Wood Retaining Wall (1)	\$110,493.18
0330-803-W002	A.M. Transport Service	Tobago	Big Hole Retaining Walls (2)	\$ 69,121.04
0330-803-T003	Sant's Equipment and Rental	Tobago	Bobcat front-end loaders (2)	\$102,556.04
<b>Subtotal Tobago</b>				<b>\$282,170.26</b>
0330-803-P002	Dept. Local Gov. & Com. Dev.	Dominica	MoSSaiC	\$49,114.81
<b>Subtotal Other</b>				<b>\$49,114.81</b>
<b>Total</b>				<b>\$746,071.07</b>
Grants				
Subgrant #	Grantee	Location	Project	Value (USD)
0330-803-P001	PRF	St. Lucia	MoSSaiC	\$49,440.07
0330-803-T004	Riacomm	Tobago	CERT Training	\$49,850.00
0330-803-P003	NDF	Antigua	Safer Building Training	\$33,358.89
<b>Total</b>				<b>\$132,648.96</b>

## VIII. Conclusions

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Through this USAID Caribbean Regional Community Revitalization and Disaster Mitigation Program, the Caribbean Region gained significant tangible benefits from the US\$1.95 million set aside for this program.

The island of Tobago now has a safer road infrastructure as a result of the retaining walls PADCO constructed along the main east-west road of the island. Additionally, communities are better prepared to respond to natural disasters with assistance from the CERTs that PADCO helped organize and train. In the Bahamas, 19 families now have safe, hurricane resistant housing to replace their homes left uninhabitable by hurricanes Jeanne and Francis in 2004. Further, through the seminars that PADCO provided to these new homeowners, they are more informed of the hurricane resistant design features of their homes and how to properly maintain them so they will last long into the future.

Through PADCO's work with OECS, USAID now has a well-informed foundation upon which to base their future disaster mitigation program. PADCO's support to OECS and the implementation of pilot projects demonstrated several community-based approaches to effective disaster mitigation in the eastern Caribbean. As a result of these pilot projects, building contractors and homeowners in Antigua/Barbuda are now trained in safer construction techniques and two informal settlements in St. Lucia and Dominica have reduced the risk of landslides in their communities.

This program shared the lessons learned from these pilot projects and other successful approaches in the region with over 50 professionals from nine OECS member states by hosting the OECS "Lessons Learned" conference in February 2006. The outcomes of this conference will inevitably inform USAID's "next steps" for future disaster mitigation programming.

## Attachment A: Final Performance Indicators Spreadsheet

**PADCO Bahamas Activities - FINAL, March 31, 2006**  
**USAID Hurricane Ivan Reconstruction Program - The Bahamas**  
**More Secure Lives and Livelihoods for People in the Bahamas Affected by Hurricanes**  
**Grand Bahama Island**

**IR1: Communities revitalized (Target communities revitalized [II])**

**CTO: Sean Hall**

**Result #1: Targeted houses damaged by Hurricane Jeanne reconstructed to pre-hurricane or better conditions and are in compliance with building code and hurricane resistance/environmental standards.**

**Proposed Total Funding \$ 570,069 (inclusive of labor, overhead, etc.)**

<b>Indicators</b>		<b>Overall Target</b>	<b>Achieved to Date</b>		
A.	No. damaged houses reconstructed (gender disaggregated by head of household)	19 houses	19		
B.	No. communities benefiting from new housing;	1	1		
C.	No. people benefiting from new housing (disaggregated by gender) <i>Direct Beneficiaries (HH occupants)</i> <i>Indirect Beneficiaries (HH dependence)</i>	90	83 (F:49; M:34) 54 29		
D.	No. of people informed of low-cost, hurricane resistant construction/maintenance techniques	50	50		
<b>Activity</b>	<b>Subcontractor</b>	<b>Funding</b>	<b>Amount Committed</b>	<b>Location</b>	<b>Status/Issues</b>
Rebuild houses	WEBCO Ltd.; Walkins Construction; KFL Construction; Moses Wilson	\$425,000	\$425,000	West End, Grand Bahama Island	Complete
Hurricane Mitigation Public Education	in-house TA	\$10,000	\$6,800	West End, Grand Bahama Island	“
Sub Total		\$435,000	\$431,800		

**PADCO Tobago Activities - FINAL, March 15, 2006**  
**USAID Hurricane Ivan Reconstruction Program - Tobago**  
**More Secure Lives and Livelihoods for People in Tobago Affected by Hurricanes**  
**Tobago**

**IR1: Communities revitalized (Target communities revitalized [II])**

**CTO: Sean Hall**

**Result #1: Targeted communities damaged by landslides in 2004 hurricane season benefit from hillside stabilization and improved ability to respond to future natural disasters.**

**Proposed Total Funding \$ 567,332 (inclusive of labor, overhead, etc.)**

<b>Indicators</b>		<b>Overall Target</b>	<b>Achieved to Date</b>		
A.	No. hillside stabilization projects completed	3	3		
B.	No. communities benefiting from hillside stabilization;	1	1		
C.	No. people benefiting from income generation activities: (disaggregated by gender)	20	22 (F: 3; M: 19)		
D.	No. people benefiting from CERT training: (disaggregated by gender)	40	38 (F: 16, M: 22)		
E.	No. communities benefiting from CERTs equipment	3	3		
<b>Activity</b>	<b>Subcontractor</b>	<b>Funding</b>	<b>Amount Committed</b>	<b>Location</b>	<b>Status/Issues</b>
Hillside Stabilization Projects	P.R. Contracting - Good Wood Project A.M. Transport - Big Hole #1 and #2 Project	\$200,000	\$186,000	Good Wood and Big Hole	Complete
Equipment Procurement for CERTS	Sants Equipment and Rental	\$110,000	\$106,000	Delford, Speyside, and Charlottesvile	"
Training of CERTs	Riaccomm	\$50,000	\$50,000	Delford, Speyside, and Charlottesvile	"
<del>Community Clean-up programs</del>	reprogrammed to support NEMA to coordinate CERT training		\$16,000	Delford, Speyside, and Charlottesvile	"
Sub Total		\$360,000	\$358,000		



**PADCO Regional Disaster Mitigation Agenda and Conferences Activities - FINAL, March 15, 2006**

**USAID Hurricane Ivan Reconstruction Program - Regional Disaster Mitigation Agenda**

**More Secure Lives and Livelihoods for People in the Caribbean Affected by Hurricanes**

**IR1: Communities revitalized (Target communities revitalized [III] )**

**CTO: Sean Hall**

**Result #1: Low-income communities in Caribbean region are better prepared to mitigate against future damage from natural disasters.**

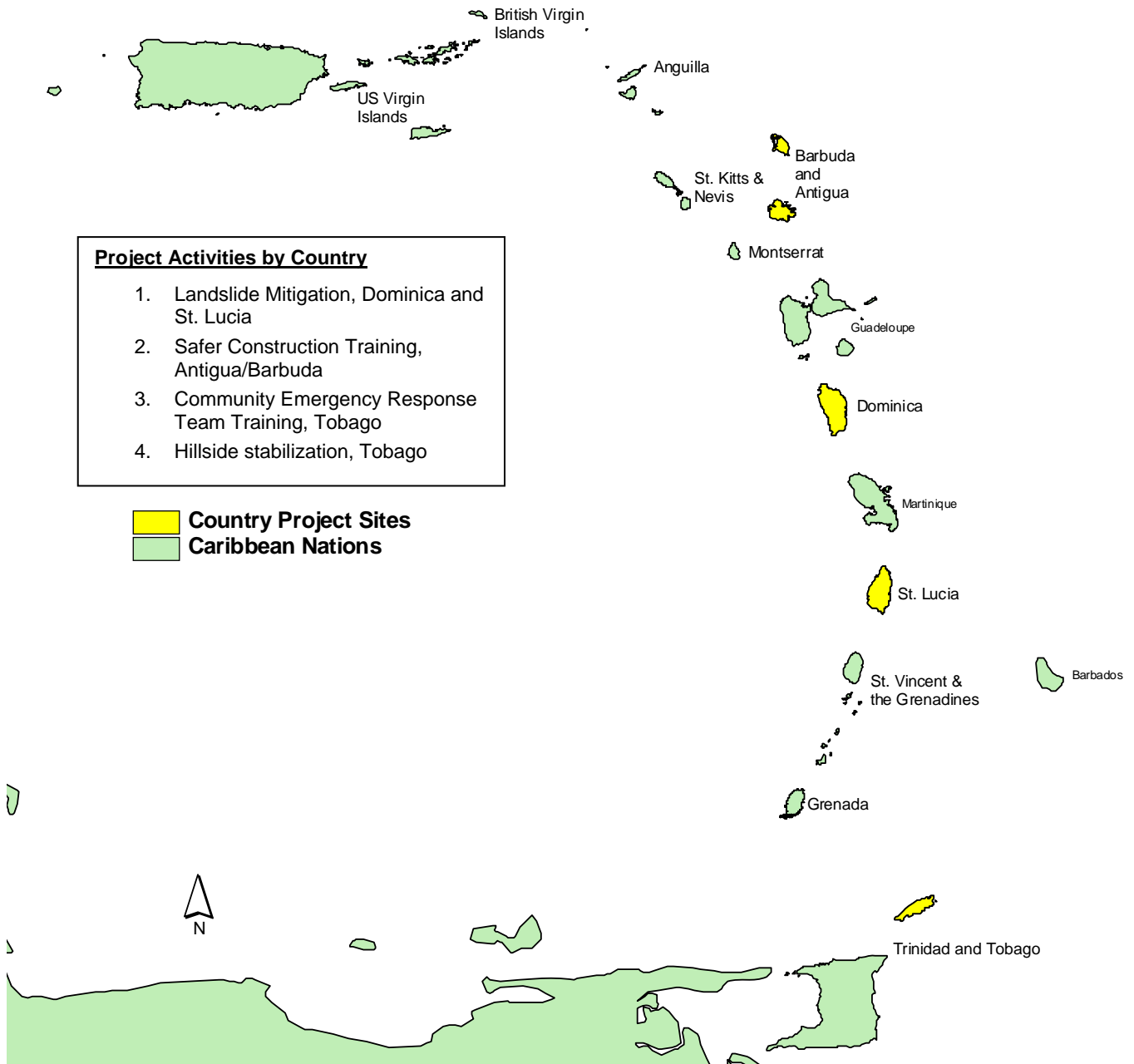
**Proposed Total Funding \$ 597,994 (inclusive of labor, overhead, etc.)**

<b>Indicators</b>		<b>Overall Target</b>	<b>Achieved</b>		
A.	Action agenda items identified and defined	1 to 5	3		
B.	Conferences supported	3	2		
C.	Pilot project:	3	0		
C1.	<b>St. Lucia</b> a) No. of HH benefiting from reduced risk of landslides: (total people disaggregated by gender)	50	60 (F: 105; M: 75)		
	b) No. of people employed by development project: (total people disaggregated by gender)	NA	25 (F: 3; M: 22)		
C2.	<b>Dominica</b> a) No. of HH benefiting from reduced risk of landslides: (total people disaggregated by gender)	30	25 (F: 56; M: 14)		
	b) No. of people employed by development project: (total people disaggregated by gender)	NA	33 (F: 2; M: 31)		
	<b>Antigua</b> a) No. of contractors trained in safer construction tech; (total people disaggregated by gender)	30	65 (F: 16; M: 49)		
C3.	b) No. of homeowners better informed of safer construction tech. (total people disaggregated by gender)	NA	288 (F: 206; M: 82)		
<b>Activity</b>	<b>Subcontractor</b>	<b>Funding</b>	<b>Amount Committed</b>	<b>Location</b>	<b>Status/Issues</b>
Policy and Legislation Review (including Grenada Case Study)		\$12,000	\$12,000	Regional	Complete
Agenda Items Defined		\$62,000	\$62,000	Regional	“
Conferences Supported		\$72,272	\$72,272	Jamaica, St. Lucia	“
Pilot Projects Implemented	1. St. Lucia = PRF; 2. Dominica = DLGCD; 3. Antigua = NDF	\$135,000	135,000	St. Lucia, Dominica, Antigua & Barbuda	“
Sub Total		\$281,272	\$281,272		

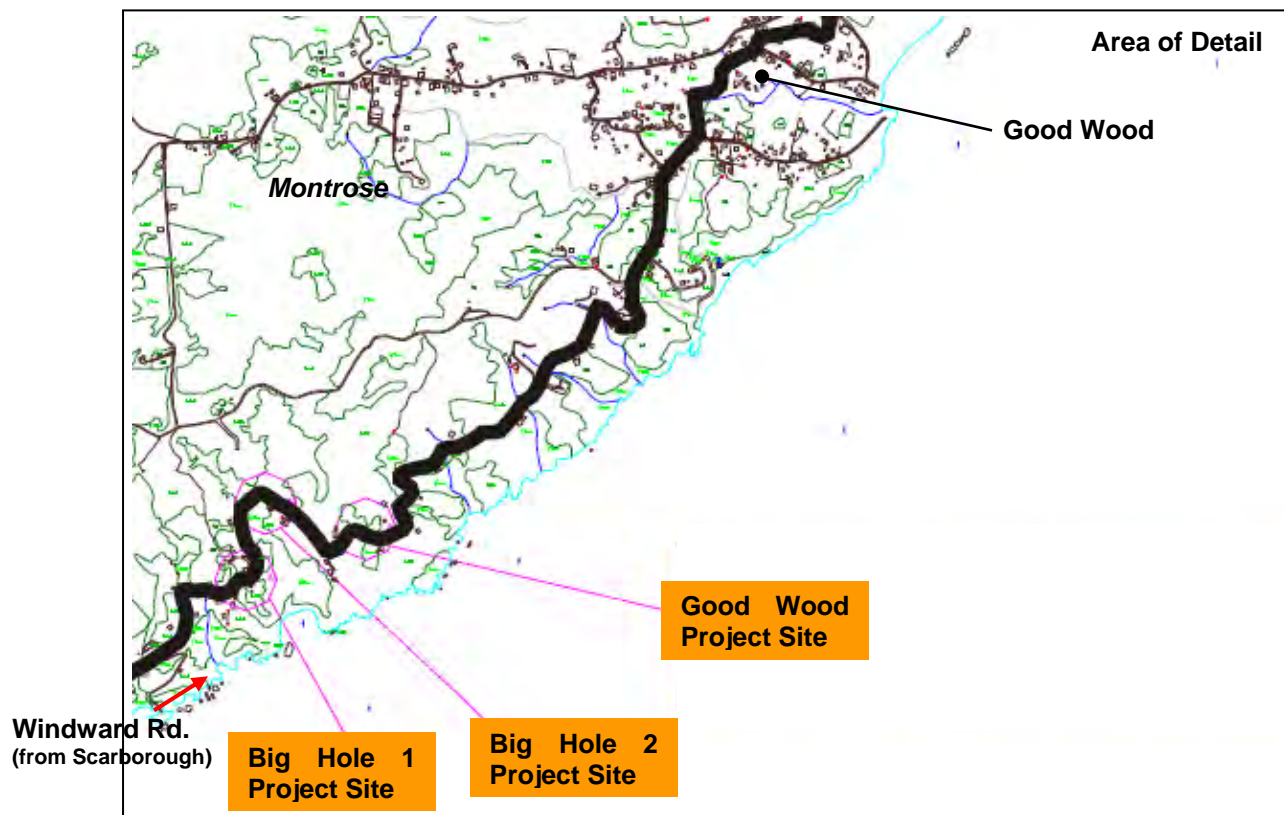
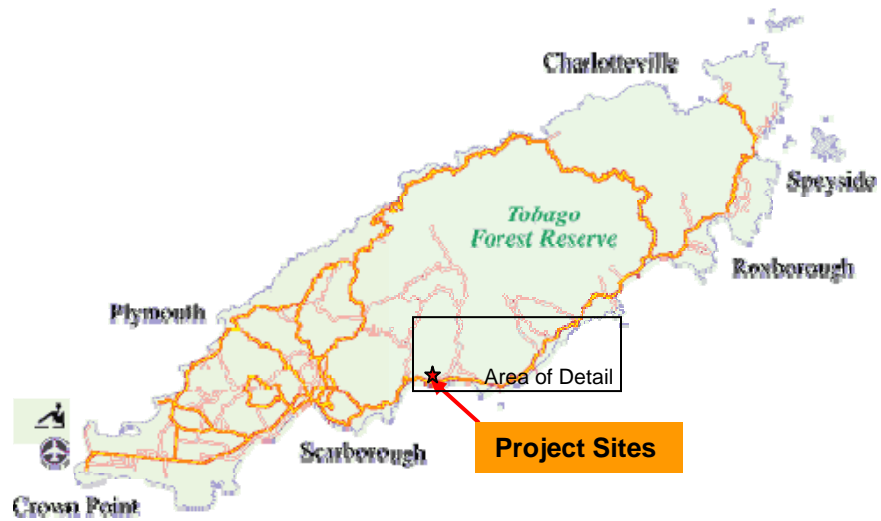


## Attachment B: Map of Project Locations

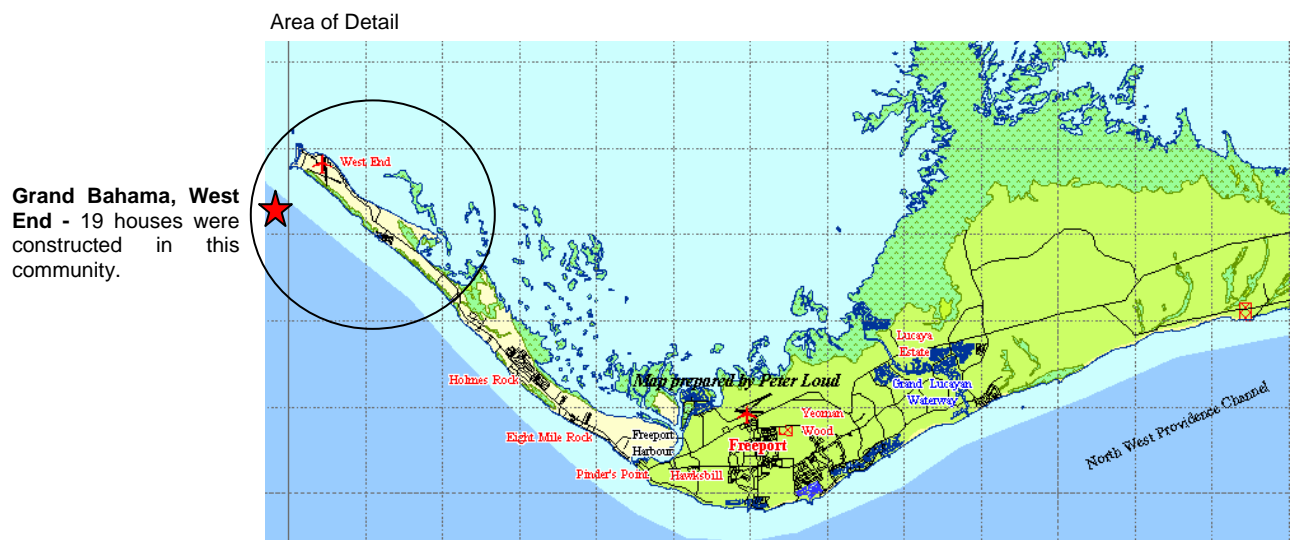
### Eastern Caribbean Pilot Projects



## Tobago Hillside Stabilization



## Bahamas Housing Construction



## **Attachment C: Beneficiary Selection Process, Bahamas**

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### **Beneficiary Selection**

PADCO targeted low-income and vulnerable beneficiaries through this program. The selection of these beneficiaries was based on the following criteria:

- The property was occupied by the owner at the time of the hurricane
- The owner did not have hurricane insurance coverage
- The household has a weekly income of \$250.00 or less
- The owner has secure tenure

These criteria were set by the MoH and the NEMA and were adopted by PADCO as they captured the low-income and vulnerable populations USAID sought to assist.

To identify families or persons in the West End eligible for assistance based on these criteria, assessments were conducted by Technical Officers from the MoH and National Insurance and the Department of Social Services with the assistance of the District Administrator, Counselors, the Ministry of Public Works, Royal Bahamas Police Force, the Department of Environmental Health Services, and others. Of the possible beneficiaries that MoH/NEMA identified (57), nineteen (19) families considered in “urgent need” by the above committee were assigned to PADCO. The MoH/NEMA provided housing for as many as possible of the remaining families.

## Attachment D: Summary of Housing Costs per Housing Solution, Bahamas

In line with the cost sharing plan established with the GOB, PADCO only funded labor costs for the construction of each house plus additional associated works for each house such as land preparation, concrete for stilt construction and other contingencies such as gasoline for generators during power cuts following Hurricane Wilma. The following is a summary of costs per housing solution.

### PADCO House Rebuilds - West End, Grand Bahama

House Size	Subcontracted Costs					Total PADCO Costs per House	Total GOB Materials Costs per House*	Total Cost per Housing Solution
	Labor Cost	Assoc. Works	Concrete for Stilts	Land prep	Ground Well Drilling			
2 Bedroom	\$16,761	\$3,941	\$1,024	\$1,074	\$975	\$23,775	\$15,000	\$38,775
1 Bedroom	\$11,494	\$3,941	\$1,024	\$1,074	\$975	\$18,508	\$15,000	\$33,508

#### Note:

\*These figures are approximate costs of material contributed by GOB per house. They are based on estimates of typical material to labor ratios. The actual costs of materials provided by GOB could vary depending on whether they paid duties or had other discount arrangements.

#### Definition of Cost Categories

**Labor costs** include only those costs applied to labor for construction and management of each house.

**Associated Works** include septic tank procurement and installation, builders insurance, electric and water hookup, gas during power outage following Hurricane Wilma, and additional requirements by MoH.

**Concrete for Stilts** includes the cost of procuring and delivery concrete for the construction of stilts for each house. Stilts were constructed as a mitigation measure against flooding and storm surge. GOB did not provide this material or cost.

**Ground Well Drilling** costs were deducted from the original subcontract amounts and pooled in order to hire one contractor to complete all ground wells and leverage economies of scale.



## Attachment E: Establishing Fixed-Price Labor-Only Contracts

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**Subcontract Selection Process:** PADCO reviewed and used the Bahamas MoH subcontracting system. The key elements of this system include: i) use of “market based” labor rates; ii) fixed-price labor-only contracts; iii) use of pre-qualified contractors; and iv) lottery of contracts. This system allows USAID/PADCO to subcontract for labor only while the MoH provides all materials to our selected contractors for free.

**“Market Based” Labor Rates:** The Bahamas MoH has extensive experience in subcontracting builders to construct their three standard 1, 2, and 3 bedroom affordable housing designs throughout Grand Bahama and other islands of the Bahamas. As of January 20<sup>th</sup>, 2005 the MoH had issued approximately USD\$1,070,465.00 in labor-only contracts in Eight Mile Rock, the neighboring community to West End. In the West End, USD\$1,085,974.62 in labor-only contracts to rebuild 36 homes and repair others has been signed. Additionally, total cost of contracts signed in the East End area amounted to USD\$478,596.00, representing labor cost only. From this experience the MoH has established competitive “market rates” to construct their standard MoH house designs.

**Fixed-Price Labor-Only Contracts:** The fixed-price contracts, established by the MoH, for total labor to complete each 1 and 2 bedroom house design on stilts are: \$11,494.00 and \$16,761.00, respectively. Additionally, MoH has established standard prices to complete all associated works, including: septic tank (\$1,600); ground well (\$400); and sanitary well (\$1,200). PADCO will use these same rates to engage contractors in fixed-price contracts for labor only.

Of the nineteen (19) beneficiaries selected to receive houses, the house sizes and associated works were determined for each beneficiary. The house size was determined by matching the size of the destroyed beneficiaries’ home as close as possible (1 or 2 bedroom). Associated works required for each site were determined through site surveys conducted by PADCO consulting engineer and completed in conjunction with Wingert engineer. Those sites in closest proximity to each other were clustered to provide economies of scale to the selected contractors. The following clusters and costs were determined.

### CONTRACTOR SELECTION

**Pre-qualified Contractors:** The MoH pre-qualified and approved 39 licensed contractors capable of carrying out timely and quality construction and made this available to PADCO on May 31<sup>st</sup>, 2005. As their current hurricane recovery program progressed they also identified additional contractors (7) and “non-performing” contractors (3) and subsequently updated the list of those pre-qualified. PADCO used these pre-qualified contractors in order to engage qualified contractors and expedite the selection process.

On August 9<sup>th</sup>, 2005 PADCO sent written “requests for expressions of interest” to all pre-qualified contractors to identify all those interested in 1) participating in the USAID/PADCO West End reconstruction program through fixed-price labor-only contracts and 2) receiving 1 or more houses out of 19 to construct through a lottery.

A total of five (5) contractors expressed interest.

**Contractor References:** In addition to the pre-qualification completed by the MoH, PADCO conducted the following reference checks to ensure that these contractors are capable of completing the works under consideration in a timely and profession manner. The following information was collected from each contractor:

1. a statement of financial standing from their bank
2. a list of projects completed over the past 2 years, including contact information, contract value and type of work
3. a statement of capacity: project managers, labor and equipment, etc.

## **Attachment F: NEMA Tobago CERT Recruitment Guidelines**

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### **Applicant's Qualification and Experience:**

At least five (5) CXC O' levels subjects - English and Biology compulsory. Applicants should be numerically and computer literate.

Applicants must live in their respective communities in Tobago.

Applicants must be at least eighteen (18) years old.

Applicants must have a commitment to continuing education in disaster preparedness.

Applicants must agree to work cooperatively with the training and guidelines of the NEMA Tobago CERT organization.

Applicant should have a current driver's license (Manual), be physically fit, and able to effectively use all senses and be able to lift or move 150 lbs.

As part of the selection process, applicants will be required to successfully witness an autopsy, work in a convalescent home for three (3) days and work along with Emergency Medical Technicians in an ambulance for one (1) week.

Manual Learners/Drivers License.

It is compulsory that each applicant obtain from the nearest health centre a Hepatitis B Vaccine.

### **Career Benefits:**

Life Long training Skills

Fascinating Financial Benefits

Training Opportunities

Live within your work environment

### **Application Procedures:**

The submission of Applications, Resume, Police certificate of good character and two passport pictures by interested applicants to the CERT Coordinator, N.E.M.A Tobago, Fairfield Complex, Bacolet Street, Scarborough, Tobago, concluded on the 11<sup>th</sup> November 2005.

Contact: 868-639-1782 for further information

## Attachment G: Description of CERT Training Courses Funded by USAID

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### **CERT Course: Water Rescue Training Program**

The Tobago CERT Water Rescue Training Program began on the 13th of February, 2006 and provided 60 contact hours to thirty eight (38) students in the training. Students were taught to rescue victims from any accident involving water such as flooding, boating accidents, falling accidents at a shoreline, difficulty while bathing, and the like, which require rescue aid. The training course was developed to address each situation and the particular problems and risks they present.

Basic skills were taught regarding the proper use of water rescue equipment (water throw bags, boats, etc.), victim handling, and standard medical issues pertaining to water rescue.

Students were taught to assemble inflatable boats, remove a patient in a wheelchair from a flooded area, and remove a patient who is confined to a bed from a flooded area. The students were also taught how to retrieve a victim from the water into a boat and how to put a victim onto a backboard while in the water and then put the backboard into the boat in both shallow and deep water.

The students learned the challenges of launching and maneuvering the inflatable rescue boats in rough sea conditions and close quarters. Many scenarios were completed that simulated “real world” situations where the students needed to develop and execute rescue plans. Inflatable boats equipped with a 15 Horse Power Mercury engine were used for the course. These boats provided swift water rescues as they are able to access difficult to reach casualties such as those trapped on cliffs or in sea caves. The students practiced using flotation devices such as Float Cans, Spine Boards and Personal Flotation Devices.

This course build on the skills learned in previous courses, including knots learned in the High Angle Rescue course and the medical skills learnt in the Basic Cardiac Life Support and EMT program.



Left: CERT students practice lowering mock victim onto rescue boat during water rescue training.



Left: CERT students practice deploying and operating boat in Tobago bay during water rescue training.

## **CERT Course: High Angle Rescue Training Program**

The Tobago CERT Highangle Rescue Training Program began on the 6th of February, 2006 and provided a total of 60 contact hours. Thirty-nine (39) students participated in the training. Students were taught how to tie various knots essential for executing a professional and safe rescue of victims using both ropes and cables.

At the end of the course, the students were able to:

- use three main ropes involved in a basic rescue operation: Belay Rope, Main rope and Edge-man rope.
- properly use safety gear such as boots and helmet to execute a rescue exercise.
- use harnesses in securing victims without causing further injury while being rescued from over a cliff edge.



Left: CERT students practice knots taught during high angle rescue training.



Left: CERT students lower stretcher over precipice during high angle training.

## **CERT Course: BobCAT Skid-Steer Loader Training**

The CERT BobCat Skid-Steer Loader Training Program provided training for thirty-nine (39) participants during the period of January 16th to 20th, 2006 and was held at the Trinidad and Tobago Hospitality & Tourism Institute (Tobago Campus), Mt. St. George, Tobago. This training program presented knowledge and skills to each participant to prepare them to efficiently operate, maintain and maneuver a BobCat Skid Steer Loader, specifically the BobCat 300 Model procured by PADCO for the CERTs. The training was provided by Sant Equipment Ltd. of Trinidad and Tobago, the supplier of the machines.

At the end of the course, the students were able to:

- Understand how weight distribution affects skid-steer loader steering and stability.
- Explain the difference between Tipping Load and Rated Operating Capacity.
- Understand how to use all steering levers to operate the hydrostatic transmission and loader.
- Understand the importance of maintenance in safe, efficient, and productive operation.
- Identify all the machine's controls and their functions.
- Identify the loader's safety features and explain their importance.
- Explain the steps of safe entry and exit from the machine.
- Understand when to change and use the different attachments (grapple, pallet fork, bucket loader, metal tracks) and the use of the Bob-Tach System.
- Know the fundamentals of safe maneuvering, traveling and working with the attachment.



Left: CERT students practice moving earth and debris during Bobcat training.



Left: CERT students learn to use the grapple attachment to move fallen trees during the Bobcat training



### **CERT Course: Telecommunication Training Program**

The CERT Telecommunication Training Program allowed each participant to become familiar with essential telecommunication practices through hands-on experience, thereby equipping them to effectively react in the event of an emergency.

The duration of the CERT Telecommunication Program was four days, beginning January 9th until 12th, 2006 with a total of thirty-nine (39) participants. At the end of the course, the students were able to:

- Understand the philosophy and importance of Emergency Communications;
- Understand the process and issues of Information Management;
- Select appropriate Emergency Communications and other methods;
- Understand the Radio Frequency Spectrum;
- Become familiar with antennas and propagation methods;
- Become familiar with radio equipment;
- Understand the principles of use of different types of equipment and methods;
- Carry out basic radio operations;
- Operate and maintain radio equipment in a safe and secure manner;
- Understand the layout and operations of a message control centre;
- Understand and work in support of an Emergency Communications Plan.



Left: CERT students practice setting up radio communication equipment during telecommunications training.

### **CERT Course: Tobago (CERT) EM/2000 Training Program**

EM/2000™ Emergency Management software is capable of gathering, processing and distributing data to support decision making during emergency management. Decision makers can use these tools to quickly determine the magnitude of an emergency event or disaster, locate and deploy resources, log incident information, track requests and tasks, generate situation reports, and communicate critical information across large groups of users utilizing various communication mediums (LAN, WAN, Internet, Intranets, traditional land lines, cellular and satellite).

EM/2000™ works efficiently in addressing all four phases of the emergency management cycle: preparation, mitigation, response and recovery. It provides a common platform for all public agencies and private industry that are involved in protecting their critical infrastructures.

The CERT EM/2000 Training Program began on January, 25 2006 and provided a total of forty (40) contact hours. Thirty-nine (39) participants attended. At the end of the course, the students were able to:

- Communicate with one another over local, or wide area networks

- Create and log incidents and incident reports
- Assign and track tasks
- Devise intuitive disaster plans
- Store and maintain information on organizations and individuals
- Actively maintain closures (bridges, roads, tunnels, airports, etc.) throughout affected area
- Create incident specific checklists for individuals as determined by administrator
- Quickly identify the status of surrounding shelters
- Deploy and receive inventories, both human and material resources
- Log incoming calls into the agency
- Track the status of weather conditions
- Create and issue situation reports, public statements and status reports, ensuring that all decision makers are kept informed of the impacts on populations and property, response activities, and priorities, and the status of key resources being used to stabilize the situation
- Define emergency response goals for a given period



Left: CERT students practice using EM/2000 software during training course.

### **CERT Course: Basic Cardiac Life Support Training**

Basic Cardiac Life Support training addressed victim identification, problem recognition and stabilization. This training is provided to the CERT members so they can provide Basic Cardiac Life Support during any medical emergency. These situations usually require swift action to be successful and the potential risk to the victim is great. Various types of rescues were identified by the instructors and the trainees were taught when to implement each using special techniques to minimize risk to the victims until they can be transported to or attended by a medical doctor.

This training is needed by all the responders who will man the CERT vehicles. As the first to respond to any disaster, the CERT members must be able to identify the risks, develop a safe course of action, and take proper actions whenever the situation presents itself. At the completion of this training, members were able to:

1. Provide assistance to victims in identifying life threatening conditions.
2. Provide assistance to victims when their airway is compromise.
3. Provide assistance to victims in a crush situation.
4. Provide assistance to victims in an accident situation.

This training is part of a comprehensive solution that will prepare the CERT members for most rescue situations they may face. The theories involved were covered through both classroom and practical scenarios.

This Training was taught by a group of instructors to approximately fifty (50) participants and took approximately three days to complete. It gave each student the opportunity to use of associated rescue equipment. All participants received a certificate at the end of the Training.



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Left: CERT students observe teacher preparing to demonstrate CPR during basic cardiac life support training.



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Left: CERT students pose for photo following Bobcat training.

## Attachment H: OECS/USAID Lessons Learned Conference, Executive Summary

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**Introduction:** The Lessons Learned Conference was convened by the Environment and Sustainable Development Unit of the Organization of Eastern Caribbean States (OECS/ESDU) and PADCO with funding from USAID, bringing together practitioners involved in disaster management and mitigation from the sub-region. The primary purpose of the meeting was to review current projects and procedures on the subject matter, as well as to chart a way forward for the strategic intervention of the OECS/ESDU in assisting member states improve their resilience to natural hazards and disasters.

**The formal opening session** involved remarks from the facilitating and funding agencies as well as from a Government representative of the host country, Saint Lucia. The remarks were on a common theme, noting the comparatively high vulnerability of the OECS countries to disasters; the need for investment in disaster mitigation especially in view of the cost of not doing so; calling for a collaborative approach to disaster risk reduction; the need to focus on vulnerable communities especially the poor; and the need for greater use of appropriate technologies in addressing disaster risk reduction and disaster management.

**An Economic Analysis of the impact of disasters in the OECS** provided the background for which interventions were being sought. The presentation was introduced with a literature review that noted the high levels of damage experienced by developing countries when compared to developed countries. The presentation further highlighted the vulnerability to natural disasters of small island and developing states, with particular reference to the OECS, where six states were among the 10 most vulnerable in the world. The presenter also noted that there appeared to be a “phantom jump” in the debt to GDP ratio as a result of disasters in several OECS countries who had experienced natural disasters over the last 25 years; and that the tremendous negative economic growth which followed natural disasters in the sub-region, was greater than the affected country’s internal capability to respond.

**Three Pilot Project Case Studies** were presented from the islands of Dominica, Saint Lucia and Antigua, respectively. The Dominica and Saint Lucia case studies examined projects by state run agencies to manage vulnerable communities requiring slope stabilization interventions. The studies identified critical lessons which included ways to manage bureaucratic bottlenecks; involvement of local knowledge in addressing problems; the problematic task of securing insurance and financing for households in unplanned communities; and ensuring that the voiceless are also heard. The Antigua case study presented lessons learned from implementation of a safer construction training and awareness program for contractors and homeowners. The lessons included the need for gender balance in projects; dealing with unscrupulous contractors who use disasters as an opportunity to take advantage of the crisis or manipulate assistance programmes to benefit themselves at the expense of primary beneficiaries; the effective use of Manuals on Safe Building techniques for contractors/builders; learning from other experiences thereby making manuals more all-encompassing and therefore more useful; and the effective management of public awareness programmes in order to optimize effectiveness.

**Operationalizing Disaster Mitigation** was addressed from four perspectives. Repositioning the region so as to increase resilience; the role of the private sector; intergovernmental collaboration at the public sector level; and the experiences of a donor agency – UNDP.

**Repositioning for disaster mitigation** should be attacked from four perspectives. 1) A paradigm shift from “reactive” to “anticipatory” approaches; 2) A common vision that integrates risk reduction into all aspects of development planning and decision making; 3) Effective governance of the process by the collection of baseline data so as to monitor progress; and 4) Action items that start with achievable objectives that are monitored, revisited and revised on a regular basis.

***The Private sector*** was presented as a partner to government, collaborating at several levels including the stocking of emergency supplies, and providing priority relief support and facilitation to government after natural disasters.

***Intergovernmental and Sectoral collaboration*** was presented primarily by agencies involved in disaster management. The ARD of Grenada presented an approach that encouraged a philosophy that focused on Community viability as a prerequisite for sustainable development, and the need to listen to local intelligence in planning for communities. The experience of Saint Lucia's NEMO, demonstrated how a disaster management agency can act as an important institution for coordinating multi-agency collaboration, thereby diffusing the inter-institutional rivalry and turf-hording described by the Saint Vincent presentation which focused on obstacles to achieving meaningful dialogue and inter-sectoral collaboration.

***UNDP*** presented three areas of focus for work in the Caribbean up to 2009. These were Governance Reform, Poverty Reduction; and Capacity Building for Environmental Management. The anticipated outputs are enhanced disaster risk reduction at a national and regional level, and enhanced capacity for disaster recovery.

***Development and Disaster Risk Reduction – Policies for Action*** was presented first of all by an overview of the OECS Disaster Agenda; Strategies to Mainstream disaster mitigation interventions; and a Strategic Planning exercise on interventions at a national level.

***The OECS Disaster Agenda*** recognized fundamental challenges experienced by OECS member states, and developed a strategic response that is directed at building Community resilience to disasters. The programme has four components which include: 1) Land use planning; 2) Training; 3) Slope stabilization and 4) Micro-finance and other social safety nets.

***Mainstreaming Disaster Mitigation into National Development Planning*** was presented as an absolute necessity if disaster mitigation and risk reduction objectives are to be realized. To realize this goal mainstreaming is required through the following: 1) Political commitment and the identification of a champion at this level; 2) National Disaster Risk Reduction and Management Policy & Implementation Strategy which is incorporated into all economic development programmes including poverty reduction; 3) The enforcement of appropriate legislation, many of which already exist in many OECS member states; 4) Knowledge and a clear understanding of risk profiles associated with the various natural hazards incorporated at all levels; and 5) Practiced-allocation in the annual national budgets.

***Strategic Planning exercises*** were conducted through working groups and presentations made using basic strategic planning tools provided by the facilitator of the session. The interventions presented by the respective groups focused on: Reducing vulnerability of housing stock through improving construction standards, hazard mapping, and public awareness; and a Programme of capacity building targeted at contractors and builders.

The Group workshops also involved how to get public and private sector support for Disaster Risk Reduction interventions. The common conclusions included:

1. Lobbying respective Ministries of Finance by emphasizing revenue generating components and providing cost-benefit analyses
2. Identifying a Champion at the policy level
3. Demonstrating community buy-in
4. Providing incentives for the private sector.



**The Way Forward** confirmed the nexus between the OECS programme on Disaster Response and Risk Reduction and the findings of the Conference.

**Purpose:** To implement community approaches to building resilience.

**Impact:** Improved quality of life for persons in vulnerable communities

**Outputs:**

1. Improved capacity for community resilience
2. Improved institutional arrangement, policy frameworks and legislation for risk reduction and mitigation
3. Improved public awareness and sensitization

**SUMMARY:** The Conference concluded that the approach to the OECS Programme should pursue a two fold objective.

***1. Building capacity at the community level to develop and implement disaster risk reduction strategies.***

DRR Interventions:

- Building Codes: *builders, harmonization of codes, manuals, training*
- Retrofitting
- Slope stabilization
- Vulnerability/Hazard mapping

Private Sector Collaboration:

- Micro-finance
- Insurance
- Emergency Supplies Response

Policy Interventions:

- Unplanned Human Settlements
- Poor and vulnerable communities
- Coastal settlements (Tourism)

DRR Management:

- Compliance methodologies
- Private sector
- Community-based Organizations

***2. Integrated Development Planning that incorporates Disaster Risk Reduction (Mainstreaming)***

Public Sector Support:

- Inter-Ministerial collaboration
- Advocacy to/among policy makers
- National Budgeting processes

Institutional Arrangements:

- Private sector collaboration
- Governance: *local government agencies vs community-based organizations vs national disaster organizations*

Regional Collaboration:

- “Commonalization” of Building Codes
- Training Manuals for Contractors/Builders
- Lessons Learned Conferences

## Attachment I: Conference Participant List

OECS – USAID Regional Lessons Learned Conference

Cara Suites Hotel – St Lucia

Thursday 16<sup>th</sup> to Friday 17<sup>th</sup> February 2006

**(53 total participants)**

NAME	DESIGNATION	MINISTRY/AGENCY	ADDRESS	CONTACTS
Rawle Hazel		Department of Physical Planning Government of Anguilla	The Valley Anguilla	Tel: (264) 497-5392/5064 Fax (264) 497-5924 Email: RawleSH@hotmail.com; R.S.Hazell@gov.ai
Paul Bacchus	Executive Director (Ag.)	NDF	St. John's Street P.O. Box 502, St. John's Antigua and Barbuda	Tel. (268) 462-1704/4441 Fax. (268) 462-0342 Email: ndf@candw.ag; bacchus@candw.ag
Philmore Mullin	Deputy Director	National Office of Disaster Services	American Road St. John's Antigua	Tel. (268) 562-2144 Fax. (268) 462-4742 Email: Philmore.Mullins@antigua.gov.ag
Denzil Solomon	Chief Town & Country Planner (Ag.)	Ministry of Public Works, Transportation, Environment & Development Control Authority	Cross Street Cecil Charles Building, St. John's Antigua and Barbuda	Tel. (268) 462-6427 Fax. (268) 462-6427 Email:
Drexel Glasgow	Deputy Director	Public Works Department Government of the British Virgin Islands	Central Administration Complex Road Town, Tortola British Virgin Islands	Tel. (284) 494-2722 Fax. (284) 468-5726 Email: dglasgow@gov.vg
Steve Augustine	Ag. Deputy Chief Physical Planner	Town and Country Planning Dept.	33 Administrative Drive Road Town, Tortola British Virgin Islands	Tel. (284) 494-3701, ext. 2158 Fax. (284) 494-5794 Email:

NAME	DESIGNATION	MINISTRY/AGENCY	ADDRESS	CONTACTS
Annie Edwards	Physical Planner	MoH, Lands and Physical Planning	P.O. Box 2305 Castle Comfort Commonwealth of Dominica	Tel. (767) 448-2401, ext. 3741 Fax. (767) 449-8110 Email: physicalplanningdiv@cwdom.dm
Bernard Ettinoffe	Executive Director	NDF of Dominica	9 Great Marlborough Street Box 313, Roseau Commonwealth of Dominica	Tel. (767) 448-3240 Fax. (767) 448-0225 Email: ndfd@cwdom.dm
Claudine Roberts	Assistant Local Government Commissioner	Department of Local Government & Community Development/Ministry Of Comm. Dev. & Gender Affairs	High Street Roseau Commonwealth of Dominica	Tel. (767) 266-3906/449-8615 Fax. (767) 448-4717 Email: localgovt@cwdom.dm
Ivan Laughlin	Human Settlement Consultant	ARD	Botanical Gardens St. George's Grenada	Tel. (473) 439-5606 Fax. (473) 439-5609 Email: ilaughlin@ardgrenada.org
Elizabeth Charles-Soomer	Physical & Development Planner (Consultant)	ARD	Botanical Gardens St. George's Grenada	Tel. (473) 439-5606 Fax. (473) 439-5609 Email: echarles-soomer@ardgrenada.org
Sylvan McIntyre	National Disaster Coordinator	National Emergency Management Office	Grenada	Tel.: (473) Fax. (473) Email:
Vicky Hards	Scientist (Volcanologist)	Montserrat Volcano Observatory	Flemmings, Montserrat	Tel. (664) 491 5647 Fax.. (664) 491-2423 Email: Vicky@mvo.ms/mvo@mvo.ms
Franklyn Greenaway	Chief Physical Planner	Ministry of Agriculture, Land, Housing & Environment	Brades Montserrat	Tel. (664) 491-6795/97 Fax. (664) 491 5655 Email: greenawayf@gov.ms
Carl Herbert	National Disaster Coordinator	NEMA	P.O. Box 186 Basseterre St. Kitts-Nevis	Tel. (869) 466-5100 Fax. (869)466-5310 Email: nemaskb@thecable.net

NAME	DESIGNATION	MINISTRY/AGENCY	ADDRESS	CONTACTS
Ellis Hazel	Director, Physical Planning and Environment	Ministry of Sustainable Development	P.O. Box 597, Bladen Commercial Development Basseterre St. Kitts-Nevis	Tel. (869) 465-2277 Fax. (869) 465-5842 Email: phyplskb@sisterisles.kn
John Guilbert	Director	Nevis Historical & Conservation Society	P.O. Box 563, Hamilton House Low Street Nevis	Tel. (869) 469-5786 Fax. (869) 469-0274 Email: nhcs@sisterisles.kn
Angela Walters-Delpeche	Physical Planner	Department of Physical Planning	Main Street Charlestown Nevis	Tel. (869) 469-5521, ext. 2040 Fax. (869) 469-0096 Email: nevplan@yahoo.com
Laurel Arthurton	Project Officer	Nevis Disaster Management Office	P.O. Box 692 Charlestown Nevis	Tel. (869) 469-0930/1423 Fax. (869) 469-5407 Email: bathbogs90@yahoo.com
Sharmon Jules	Associate Peace Corps Director	US Peace Corps	Barnard Hill Castries Saint Lucia	Tel. (758) 453-6373 Fax; (758) 45 Email: sjules@lc.peacecorps.gov
Julian Du Bois	Deputy Director	National Emergency Management Organisation, Office of the Prime Minister	Red Cross Building Vigie, Castries Saint Lucia	Tel. (758) 452-3802 Fax. (758) 453-2152 Email: eco@candw.lc
Frances Stanislas	Quantity Surveyor	Ministry of Physical Development, Environment and Housing/Member of NEMO's Damage Assessment & Needs Analysis Evaluation Subcommittee	P.O. Box 706 Graham Louisy Administrative Building, Waterfront, Castries Saint Lucia	Tel ( 758) 468-4428/519-3232 Fax. (758) 452-2506 Email: fstanislas@hotmail.com
Fay Mathurin-Albert		National Emergency Management Organisation	P.O. Box 1517 Castries Saint Lucia	Tel.: (758) 452-3802 Fax. (758) 453-2152 Email: eoc@candw.lc
Mr. Joachim Henry	Officer in Charge	PRF	31 Leslie Land Castries Saint Lucia	Tel. (758) 452-2181/6699 Fax. (758) 453-6056 Email: henryj@candw.lc

NAME	DESIGNATION	MINISTRY/AGENCY	ADDRESS	CONTACTS
Trevor Bristol		Chamber of Commerce	Vide Boutelle Castries Saint Lucia	Tel. (758) Fax. (758) Email:
Ardon Nelson	Chief Town Planner	MoH, Informal Human Settlements, Physical Planning, Lands and Surveys	Financial Complex Kingstown St. Vincent and the Grenadines	Tel. (784) 532-7406 Fax. (784) 456-2430 Email: ardonnelson@hormail.com
Howie Prince	Director	National Emergency Management Office	Prime Minister's Office Kingstown St. Vincent & the Grenadines	Tel. (784) 456-2975 Fax. (784) 457-1691 Email: nemosvg@yahoo.com
Joylyn Dennis	Executive Director	St. Vincent & the Grenadines Chamber of Industry & Commerce	P.O. Box 134, Hillsborough Street, Corea's Building, Kingstown St. Vincent & the Grenadines	Tel. (784) 457-1464 Fax. (784) 456-2944 Email: joylyn.dennis@svg-cic.com
Rebeca Arias	Deputy Resident Representative	United Nations Development Program	UN House, Marine Gardens Hastings, Christ Church Barbados	Tel. (246) 467-6003 Fax. (246) 429-2448 Email: rebeca.arias@undp.org
Ian King	Project Planner-CRMI	United Nations Development Program	UN House, Marine Gardens Hastings, Christ Church Barbados	Tel. (246) 467-6032 Fax. (246) 429-2448 Email: ian.king@undp.org
Elizabeth Riley	Programme Manager, Mitigation and Research	CDERA	Building # 1, Manor Lodge Complex, Lodge Hill, St. Michael Barbados	Tel. (246) 425-0386 Fax. (246) 425-8854 Email: lizriley@cdera.org
Neil Pierre	Director	UN-Economic Commission for Latin America & the Caribbean Region	1, Chancery Lane, P.O. Box 1113 Port of Spain Trinidad and Tobago	Tel. (868) 623-5595 Fax. (868) 623-8485 Email: neil.pierre@eclac.org
Karen Turner	Mission Director	USAID/Jamaica	2 Haining Street Kingston Jamaica	Tel. (876) Fax. (876) Email:
Julie Leonard	OFDA Regional Advisor for the Caribbean	USAID/OFDA	US Embassy, P.O. Box 302 Bridgetown Barbados	Tel. (246) 228-8584 Fax. (246) 431-2905 Email: jleonard@ofda.net



NAME	DESIGNATION	MINISTRY/AGENCY	ADDRESS	CONTACTS
John 'Ricky' Wilson	Development Programme Specialist	USAID	P.O. Box 302 Bridgetown Barbados	Tel. (246) 228-8070 Fax. (246) 228-8789 Email: jrwilson@usaid.gov
Mansfield Blackwood		USAID	P.O. Box 302 Bridgetown Barbados	Tel. (246) 228-8070 Fax. (246) 228-8789 Email: mblackwood@usaid.gob
Cassandra Rogers	Disaster Mitigation Consultant	CDB	P.O. Box 408, Wildey St. Michael Barbados	Tel. (246) 431-1600 Fax. (246) 426 7269 Email: rogersc@caribank.org
Yuri Chakallal	Senior Development Officer (Environment)	Canadian International Development Agency	Bishops Court Hill St. Michael Barbados	Tel. (246) 429-3550, ext. 3453 Fax (246) 429-3876 Email: yuri.chakallal@international.gc.ca
John Bachmann	Director, Infrastructure & Facilities Division	PADCO	1025 Thomas Jefferson St., NW Washington, DC, 20037 USA	Tel. (202) 337-2326 Fax. (202) 944-2351 Email: john.bachmann@padco.aecom.com
Keith Forde	Mitigation Advisor	PADCO	25 Dominica Drive Kingston 5 Jamaica	Tel. (876) 920-8963 Fax. (876) 968-8174 Email: fordkb@hotmail.com
Brian English	Project Manager	PADCO	15 Queensway Kingston 10 Jamaica	Tel. (876) 382-4430 Fax: (876) Email: briandenglish@gmail.com
Samantha Hector	Administrative Assistant	PADCO	25 Dominica Drive Kingston 5 Jamaica	Tel. (876) 301.5995 Fax. (876) 968-8174 Email: school5@cwjamaica.com
Vasantha Chase	Director, Social and Sustainable Development Division	OECS Secretariat	The Morne, P.O. Box 179 Castries Saint Lucia	Tel. (758) 452-2537 Fax. (758) 452-2194 Email: vchase@oececs.org
Keith Nichols	Head of Unit	OECS ESDU	The Morne, P.O. Box 1383 Castries Saint Lucia	Tel. (758) 453-6208 Fax. (758) 452-2194 Email: kenichols@oececs.org

NAME	DESIGNATION	MINISTRY/AGENCY	ADDRESS	CONTACTS
Mr. David T. Popo	Programme Officer	OECS ESDU	The Morne, P.O. Box 1383 Castries Saint Lucia	Tel. (758) 453-6208 Fax. (758) 452-2194 Email: dpopo@oecs.org
Mr. Peter A. Murray	Programme Officer	OECS ESDU	The Morne, P.O. Box 1383 Castries Saint Lucia	Tel. (758) 453-6208 Fax. (758) 452-2194 Email: pamurry@oecs.org
Ms. Sarah George	Programme Officer	OECS ESDU	The Morne, P.O. Box 1383 Castries Saint Lucia	Tel. (758) 453-6208 Fax. (758) 452-2194 Email: sgeorge@oecs.org
Ms. Teda Fontenard	Communications Specialist	OECS ESDU	The Morne, P.O. Box 1383 Castries Saint Lucia	Tel. (758) 453-6208 Fax. (758) 452-2194 Email: tfontenard@oecs.org
Mr. Alistar Mounsey	Programme Officer	OECS Secretariat	The Morne, P.O. Box 179 Castries Saint Lucia	Tel. (758) 452-2537 Fax. (758) 453-1628 Email: amounsey@oecs.org
Mr. Rodinald Soomer	Head, Macro-Socio- Economic Development Unit	OECS Secretariat	The Morne, P.O. Box 179 Castries Saint Lucia	Tel. (758) 452-2537 Fax. (758) 453-1628 Email: rsoomer@oecs.org
Mr. Sean Curtis Mathurin	Economic Affairs Officer	OECS Secretariat	The Morne, P.O. Box 179 Castries Saint Lucia	Tel. (758) 452-2537 Fax. (758) 453-1628 Email: smathurin@oecs.org
Mrs. Anselma Fevrier	Administrative Assistant	OECS-ESDU	The Morne, P.O. Box 1383 Castries Saint Lucia	Tel. (758) 453-6208 Fax.: (758) 452-2194 Email: afevrier@oecs.org
Sylvester Clauzel	Rapporteur	Scribal Consultancy Services	P.O. Box CP 6151 Castries Saint Lucia	Tel. (758) 454-3558/484-3119 Fax. (758) Email: scribal@candw.lc

## Attachment J: People Consulted during Pilot Project and Agenda Development

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### **Grenada**

Mr. Terry Charles, Director General, Red Cross  
Mr. Sylvan McIntyre, National Disaster Coordinator, National Disaster management Agency  
Mr. David James: Director, ARD  
Mr. Frances McBarnette, Director, Office of the General Secretariat in Grenada, OAS

### **Barbados**

Mr. Donovan Gentles, Preparedness and Response Manager, CDERA  
Mr. Yuri Chakalall, Senior Development Officer, Canadian International Development Agency  
Mr. Ian King, Project Manager, UNDP  
Mrs. Rebecca Arias, Deputy Resident Representative, UNDP  
Mr. Ian Purves, Humanitarian and Risk Reduction Adviser, Department for International Development  
Mr. Franklyn Michael, Regional Programme Director, Caricom Agency for Development  
Mrs. Cassandra Rogers: CDB  
Mr. Tony Gibbs, Consultant, Consulting Engineers Partnership Ltd.  
Mr. Joseph Peltier, Regional Specialist, IICA

### **Dominica**

Mrs. Claudine Roberts, Deputy Commissioner, Local Government and Community Development  
Mr. Cecil Shillingford, National Disaster Coordinator, Office of Disaster Management  
Mrs. Annie Matthews-Edwards, Senior Planning Officer, Planning Agency  
Mr. Davis Letang, Permanent Sec., Min. of Community Development, Gender Affairs, & Information  
Mr. Alexis George, Civil Engineer, Ministry of Public Works and Public Utilities  
Mrs. Kathleen J. Pinard-Byrne, Director General, Dominica Red Cross  
Mr. Severin McKenzie, Architect/Managing Director, MAC Services Inc.  
Mr. Glenroy Toussaint, District Development Office, Local Government and Community Development  
Mr. Alexis George, Civil Engineer, Ministry of Public Works and Public Utilities

### **Antigua:**

Mr. Wilbert Burke, Senior Building Inspector, Development Control Authority  
Mrs. Diann Black-Layne, Chief Environment Officer, Environment Division  
Mr. Gerald Price, Director General, Antigua and Barbuda Red Cross  
Mr. Charlesworth Davis, Chief Town Planner, Development Control Authority  
Mr. Cordell Weston, Permanent Secretary, Ministry of Public Works  
Mrs. Patricia Julian, Director, National Office of Disaster Services  
Mr. Paul Bacchus, Director, NDF

### **St. Lucia**

Mrs. Len Ishmael, Director-General, OECS  
Mr. Randolph Cato, Director Economic Affairs, OECS  
Mr. David Popo, Program Officer, OECS  
Mrs. Vasantha Chase, Head of ESDU, OECS  
Mr. Malcolm Anderson, MoSSaiC  
Mrs. Liz Holcombe, MoSSaiC  
Mr. Anthony George, PRF  
Mrs. Dawn French, NEMA, St. Lucia

### **Jamaica**

Mr. Paul Lalor, President, The Insurance Company of the West Indies  
Mr. Franklin McDonald  
Mrs. Jacqueline daCosta  
Rafi Ahmad, University of the West Indies

## Attachment K: Bahamas Beneficiary House Photo Index



Beneficiary: Irvin Cooper  
 Size: two-bedroom, MoH affordable design  
 Contractor: KFL Construction  
 Value: \$23,775 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB



Beneficiary: Ida King Rolle  
 Size: two-bedroom, MoH affordable design  
 Contractor: KFL Construction  
 Value: \$23,775 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB



Beneficiary: Ann Grant  
 Size: one-bedroom, MoH affordable design  
 Contractor: KFL Construction  
 Value: \$18,508 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB



Beneficiary: Gladstone Nixon  
 Size: two-bedroom, MoH affordable design  
 Contractor: KFL Construction  
 Value: \$23,775 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB



Beneficiary: Valderina Wilchcombe  
 Size: two-bedroom, MoH affordable design  
 Contractor: KFL Construction  
 Value: \$23,775 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB



Beneficiary: Gladis Hield  
 Size: two-bedroom, MoH affordable design  
 Contractor: West End Building Company  
 Value: \$23,775 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB



Beneficiary: Inez Walker  
 Size: two-bedroom, MoH affordable design  
 Contractor: West End Building Company  
 Value: \$23,775 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB



Beneficiary: Margaret Russell  
 Size: one-bedroom, MoH affordable design  
 Contractor: West End Building Company  
 Value: \$18,508 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB





Beneficiary: Ronald McKenzie  
 Size: two-bedroom, MoH affordable design  
 Contractor: West End Building Company  
 Value: \$23,775 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB



Beneficiary: Wellington Curtis  
 Size: two-bedroom, MoH affordable design  
 Contractor: West End Building Company  
 Value: \$23,775 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB



Beneficiary: Maxwell DeGregory  
 Size: two-bedroom, MoH affordable design  
 Contractor: Walkins Construction  
 Value: \$23,775 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB



Beneficiary: Phillip Joseph  
 Size: two-bedroom, MoH affordable design  
 Contractor: Walkins Construction  
 Value: \$23,775 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB





Beneficiary: Currie Adderley  
 Size: one-bedroom, MoH affordable design  
 Contractor: Walkins Construction  
 Value: \$18,508 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB



Beneficiary: Bonnie Cooper  
 Size: two-bedroom, MoH affordable design  
 Contractor: Walkins Construction  
 Value: \$23,775 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB



Beneficiary: Jerry Vincent  
 Size: one-bedroom, MoH affordable design  
 Contractor: Walkins Construction  
 Value: \$18,508 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB



Beneficiary: Fredericka Knowles  
 Size: two-bedroom, MoH affordable design  
 Contractor: Moses Wilson  
 Value: \$23,775 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB



Beneficiary: Luann Johnson  
 Size: two-bedroom, MoH affordable design  
 Contractor: Moses Wilson  
 Value: \$23,775 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB



Beneficiary: Clayton and Vivica Green  
 Size: two-bedroom, MoH affordable design  
 Contractor: Moses Wilson  
 Value: \$23,775 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB



Beneficiary: Orval Powell  
 Size: two-bedroom, MoH affordable design  
 Contractor: Moses Wilson  
 Value: \$23,775 for labor and associated works; + \$15,000 (approx.) materials provided in-kind by GOB





**U.S. Agency for International Development**  
1300 Pennsylvania Avenue, NW  
Washington, DC 20523  
Tel: (202) 712-0000  
Fax: (202) 216-3524  
[www.usaid.gov](http://www.usaid.gov)