

Summary

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1. Outline of the Project	
Country: Barbados (Implemented also in Trinidad and Tobago, and St. Vincent and Grenadines)	Project title: Caribbean Disaster Management
Issue/Sector: Rivers/Sand Arrestation	Cooperation scheme: Technical Cooperation Project
Division in charge: Second Technical Cooperation Division, Social Development Cooperation Dept. (Present Disaster Management Division II, Water Resources and Disaster Management Group, Global Environment Dept.)	Total cost: 531 million yen
Period of Cooperation	August 2002 – March 2006 (3 years 8 months)
	<p>Partner Country's Implementing Organization: Caribbean Disaster Emergency Response Agency (CDERA), University of West Indies (Trinidad & Tobago/Jamaica), Caribbean Institute for Meteorology and Hydrology (CIMH), Central Emergency Relief Organization (CERO: Barbados), National Emergency Management Agency (NEMA: Trinidad & Tobago), National Emergency Management Organization (NEMO: St. Vincent & Grenadines)</p> <p>Supporting Organization in Japan: Ministry of Land, Infrastructure, Transport and Tourism Fire and Disaster Management Agency Kitakyushu City, Asian Disaster Reduction Center Typhoon Committee</p>
Related Cooperation	N/A
<p>1-1. Background of the Project</p> <p>Caribbean States are located in an area vulnerable to disasters such as hurricanes, earthquakes, and volcanic eruptions. In 1991, the Caribbean Community (CARICOM) established Caribbean Disaster Emergency Response Agency (CDERA) as a coordinating agency for disaster emergency response. CDERA is an inter-governmental organization with 16 member states, of which representatives of the national disaster organizations constitute a Board of Directors. Its secretariat is based in Barbados. Since the late 1990s, the function of CDERA has been changing to Comprehensive Disaster Management (CDM) including disaster preparation, in addition to its initial role of coordinating emergency response. However, to become an effective disaster management agency, CDERA needed to improve human resources, equipment and technical knowledge on disaster prevention.</p> <p>Therefore, the Government of Barbados and CDERA requested a project-type technical cooperation from the Government of Japan in order to enhance the capacity of disaster management of CDERA. The project period was originally set to three years from August 1, 2002 to July 31, 2005, but was extended until March 31, 2006. This ex-post evaluation therefore treats the extended period (3 years and 8 months) as the subject of its investigation.</p>	
<p>1-2. Project Overview</p> <p>As a strategy for disaster reduction in communities vulnerable to flood hazards, this project aimed to establish an effective regional mechanism for facilitating flood hazard mapping and community disaster management planning. Three communities in Barbados, Trinidad and Tobago, and St. Vincent and Grenadines were selected as pilot sites. CDERA, the Regional Team (RT) consisting of CIMH, UWI, etc., and the National Teams (NTs) which were national disaster management bodies were involved in the project including technical transfer, equipment provision, etc. The aim was that after completion of the project, similar projects would be developed independently throughout the Caribbean region based on the established system.</p>	

(1) Super Goal	
Disaster damage in CDERA member states is mitigated.	
(2) Overall Goal	
The similar projects/activities to the CADM project activities, i.e. to prepare hazard maps and community disaster management plans by utilizing hazard map, are implemented in the CDERA member states.	
(3) Project Purpose	
Mechanism for preparation of hazard maps and community disaster management plans is well established and functional with CDERA, RT, and NTs' active participation.	
(4) Outputs	
1) Established organization for preparation of hazard maps and community disaster management plans.	
2) Hazard map and community disaster management plan prepared in each pilot sites.	
3) Enhanced capability within RT member organizations for hazard mapping and community DM planning.	
4) Improved capacity of CDERA as a disaster information warehouse/clearing house.	
(5) Inputs (as of the Project's termination)	
Japanese side:	
Long-term Expert 6 pers.	} 345 million yen
Short-term Expert 16 pers.	
Trainees received 19 pers.	
Equipment 74 million yen	
Local cost 95 million yen	
Others negligible	Total 531 million yen
Note: "Local cost" is provided by multiplication of 845,000US\$, according to the terminal evaluation report, by 112.9JPY/US\$ which is an average exchange rate during the project period.	
CDERA's Side :	
Counterpart	7 CDERA staff, 5 RT members, and national and local personnel from three NTs
Equipment	N/A
Land and Facilities	Office and facilities for Japanese experts
Local Cost	N/A
Others	N/A
2. Evaluation Team	
Members of Evaluation Team	Team Leader/Evaluation Design and Management: Shimboku Miyakawa Deputy General Manager, Consulting Department II, KRI International Corp. Disaster Prevention Cooperation Evaluation: Hiroshi Okukawa Social Development Planner, Consulting Department II, KRI International Corp.
Period of Evaluation	10 January 2009 – 27 January 2009
	Type of Evaluation: Ex-post
3. Project Performance	
3-1. Performance of Project Purpose	
The project purpose was almost fully achieved since the working relationship among CDERA, RT and NTs were well established and every party recognized its role to play so that flood hazard maps (FHM) and community disaster management plans (CDMP) could be properly produced. The RT members equipped with relevant knowledge and skills became ready to provide technical assistance for NTs in response to the latter's request. Provision of hydrological and meteorological data, which the terminal evaluation had considered to be a necessary but insufficiently provided resource, was improved by appointment of a hydrological analysis specialist in the extended period. However, the specialist pointed out the necessity of continuous and long-term measurement, which could not be met before completion of the project.	
3-2. Achievement related to Overall Goal	
The project aimed to be replicated in other countries than the three pilot ones. However a practical strategy to alleviate the financial constraint on sustainable functioning of the mechanism could not be illustrated before completion of the project. By the time of the ex-post evaluation, FHM have been produced in a certain number of countries, such as Jamaica, Grenada, St. Lucia, and Belize, and several bilateral and multilateral donor agencies have shown their interest in the CADM approach. However, the Phase II of CDAM project to be commenced in February 2009 is presently the only concrete initiative for implementing a similar project at new sites.	
3-3. Follow-up of the Recommendations by Terminal Evaluation Study	
The terminal evaluation study team (February-March 2005) provided three major recommendations: 1)	

formulation of a Sustainability Plan, 2) information sharing with other sectors, 3) continuous activities for smooth and effective expansion of FHM and CDMP. CDERA developed the Sustainability Plan but its nature is a proposal for further expansion of activities with the support of possible donors rather than a commitment to retain and develop the project outcomes using available resources. Information derived from FHM has been shared with development planning, insurance, and housing, etc. Other activities, including strengthened collection of meteorological and hydrological data, technical training on GIS, flood analysis, hazard mapping, CDMP, etc. were carried out after the evaluation until the end of the extended project period.

4. Results of Evaluation

4-1. Summary of Evaluation Results

(1) Relevance

For the following reasons, this project is judged to be of fairly high relevance: It was highly relevant to the needs of the Caribbean states and the political priority of the Governments of Japan and the CARICOM member states. Flood hazard is common in the region and repeated flood disasters in 2004 and 2005 provided a firm warning to the Caribbean to strengthen the measures to mitigate hazards. Japan has a strong policy to provide international assistance for disaster management with its advanced technology and large experience. However, it is considered that further consideration of the greater involvement of the communities and alleviating the financial constraint are necessary for the relevance of the project as a means of solving the development problem of reducing flood damage.

(2) Effectiveness

For the following reasons, effectiveness of this project is judged to be high. The Project Purpose was almost fully achieved as described above. The project outputs contributed effectively to the achievement of the purpose. The organizational structure in the region, accumulated technical knowledge and skills, and provision of necessary resources, which all resulted from the project implementation, provided an effective mechanism to produce FHM and CDMP.

(3) Efficiency

For the following reasons, efficiency of this project is judged to be fairly high. Human and material resources input in the project were fully utilized and the activities were carried out coherently to maximize the project outputs. RT members with their professionalism contributed largely to efficient implementation. Training programs provided in Japan encouraged strongly Caribbean partners' active participation. Nevertheless, some personnel issues, such as frequent change of the Japanese CDMP experts, lack of full-time appointment of CDERA's staff, etc. were reported to be inhibiting factors.

(4) Impact

The impact of this project is observable but is still at a moderate level. As discussed above, while FHM have been produced in several countries, CDAM II is the only concrete initiative in implementing a similar project at new sites. As for utilization and expansion of FHM and CDMP within the three pilot countries, Trinidad and Tobago has self-reliantly developed 3-4 FHM, and Barbados is preparing for production of FHM in 2 new sites, by collecting data, etc. Unexpected effects include expansion of course offering in the related field at UWI and CIMH.

(5) Sustainability

The sustainability of this project is judged to be conditional. Working relationships between regional agencies/institutes and national disaster management organizations are well maintained. CDERA is in the process of transformation into the Caribbean Disaster Emergency Management Agency (CDEMA), officially mandated to oversee regional strategies for disaster management. CDEMA will have a technical advisory committee composed of similar members to the CADM's RT. *Comprehensive Disaster Management: Strategy and Programme Framework 2007-2012* has adopted the CADM approach as a strategy to bring about one of the four expected outcomes: "Enhanced community resilience in CDERA states/territories to mitigate and respond to the adverse effects of climate change and disasters" (Outcome 4). All those features support sustainability of the project achievement. However, financial constraint is a major concern over the fully sustainable development of the mechanism for producing FHM and CDMP.

4-2. Factors that have promoted project

(1) Impact

Relevance of the transferred technology to the regional needs have been the primary driving force for further expansion of FHM and CDMP in the region. In addition, CDERA's staff pointed out that "provision of

equipment necessary for cooperative work between RT and NTs”, “improvement of knowledge and skills of the regional institutes”, and “linkage of regional technical cooperation with practical activities meeting concrete local needs” were promoting factors.

(2) Sustainability

Timeliness of intervention, in terms of assistance for the comprehensive disaster management through collaboration between regional and national agencies/institutes when its importance was largely recognized, promoted political and institutional arrangements necessary to sustain the established mechanism. Full recognition of flood hazard as a major and constant challenge to the region has prompted constant concern on this issue. Partners’ understanding and appreciation of the principle of Japanese international cooperation to put self-reliance and capacity development at the center made a positive contribution.

4-3. Factors that have inhibited project

(1) Impact

The foremost impediment to further expansion of FHM and CDMP is lack of constant provision of the necessary financial resources. One reason for that might be the exclusion of financial issues from the project purpose, “establishment of the mechanism”, which is however vital for the achievement of the overall goal, “implementation of similar projects in other countries”. As CDERA is not a funding agency but a coordinating body primarily supported by project-based budget allocation, expectation for its self-reliant funding without external assistance is unrealistic. An appropriate means to promote FHM and CDMP in the other countries than the three pilot ones has to be sought.

Partially because of the time constraint, project outcomes did not fully benefit pilot communities. Insufficient strategy for community involvement in the project design would be one of the reasons for this shortcoming. Frequent change (three 1-year appointments) of Japanese experts in CDMP would have affected adversely the achievement of CDMP’s potential.

(2) Sustainability

Same as above.

4-4. Conclusions

The CADM project was effectively carried out to achieve its project purpose. Close working cooperation among the parties have been fostered and technical and administrative expertise has been acquired by those regional and national bodies. It has made positive impact on the expansion of FHM and CDMP through the mechanism established by the project, which is maintained in a viable manner. However, the impact is still remaining at a moderate level, and poor strategy to involve community and financial constraint are major challenges if the mechanism is to be fully functional. Further intervention would strengthen the mechanism to produce more positive impacts in a sustainable manner.

4-5. Recommendations

As a consequence of the ex-post evaluation, the evaluation team recommend that:

- 1) CDERA should reaffirm that the CADM approach is an effective means to produce Outcome 4 (Enhanced community resilience) set in the Comprehensive Disaster Management strategy and it should construct a regular monitoring system within the forthcoming CDEMA framework to assess and facilitate the progress of the achievement.
- 2) CDERA should continue looking for financial resources other than JICA’s assistance, including other donors’ funding and budgetary allocation of the member states, so that FHM and CDMP could be expanded in the entire region.
- 3) CDERA and JICA should persuade the international society as well as the CDERA member states to adopt the CADM approach through proving its effectiveness by scientific evidence.
- 4) RT and NTs should institutionalize and transmit the knowledge and skills to an augmented number of technical experts within and out of their institutions, so that personnel changes would not constitute a fatal obstacle to the development and expansion of FHM and CDMP.
- 5) Barbadian NT members should give more emphasis to community-level activities including awareness raising of FHM and CDMP among the residents; review, duplication and distribution of FHM and CDMP; improvement of the early warning system by increased number of gauge readers and simulation drills for them, in order that the project outcomes could contribute to the mitigation of

hazards in a practical manner.

- 6) RT and NTs should take greater account of non-residential population of the community, including students, workers in business and commercial sector, tourists, etc. when they design and review CDMF because non-residents are also potentially affected by disasters.

4-6. Lessons Learned

The ex-post evaluation team has drawn lessons from the CADM project implementation as follows:

- 1) In a region where a number of small countries gather and share a similar issue, such as the Caribbean, a region-wide approach to international cooperation is an efficient means to produce greater outcomes in multiple nations with smaller investment because it allows resources sharing in different countries. However, among the participating countries, there may be wide difference of technical, administrative and financial foundations on which technical assistance is supposed to build. A region-wide project is required to give careful consideration to such difference in order to reach the full potential of outcomes in every country. More intensive assistance to less performing nations could narrow the gaps.
- 2) Working with an inter-governmental coordinating body, such as CDERA, as an implementing partner, construction of a working structure and implementation of pilot activities in a limited number of nations does not automatically lead to the technical transference to the remaining states in the region. Therefore, in addition to the structural arrangements, other conditions necessary for expansion in other countries should be satisfied through the project activities. A new cooperating framework suitable for region-wide projects would be required. Otherwise, JICA's existing "Third Country Training Program", "South-South Cooperation", or Funds-in-Trust scheme of the Japanese Ministry of Foreign Affairs might be considered to be applicable solutions to follow up on a technical cooperation project.
- 3) In order for project outcomes to be fully beneficial to the end users, an appropriate outreach strategy should be included in the project design and put into practice. Furthermore, the project should be developed to facilitate further expansion of project outcomes within the pilot countries as well. Especially, for a multi-tier structure of cooperation, such as the CADM project which involved regional, national and community stakeholders in a multi-level manner, careful consideration should be given to a strategy to transmit benefits from upper to the lower levels.