

Assistance in disaster preparedness to the Government of
Trinidad and Tobago

I. Background

Trinidad and Tobago, located a short distance off the Venezuelan coast near latitude 10 degrees north, is subject to seismic and meteorological hazards as well as to damage from fires and marine oil spills.

Although located to the south of the primary hurricane area, the country has suffered from hurricanes in the past. On 30 September 1963, Hurricane Flora caused significant damage to the island of Tobago. On 14 August 1974, central Trinidad was struck by Hurricane Alma, which affected approximately 50,000 persons and caused 5 million dollars in damage. The months of June through November constitute the wet season for the country and also cover the period of tropical storm potential. The islands have numerous small rivers, none of which are navigable, but which are subject to rapid rises and flooding in case of torrential rainfall.

Geologically an extension of the South American continent, the island of Trinidad is crossed from east to west by three relatively low mountain ranges, with highest elevation reaching 941 meters in the heavily forested Northern Range. The island of Tobago is of volcanic origin, with peak elevation 549 meters. No geologically recent volcanic eruptions have occurred.

Historical seismic damage frequency, based on the record of damage over about 300 years and on instrumental readings since about 1900, show that Port-of-Spain, the nation's capital, has experienced an average of 14 earthquake events per century which were large enough to cause at least minor building damage. It has been estimated that the area of devastation in the largest probable earthquake (Richter magnitude 7.5 - 8.0), would have a radius of well over 50 kms and could easily include the whole of Trinidad. This might cause deaths of up to 10% of the population, total disruption of industrial and agricultural production, and damage to property (1974 prices) in excess of TT \$4,000 million. In addition to the direct effects of an earthquake, secondary effects from landslides and fires can also be expected, but risk from tsunami is assessed to be only a minor additional hazard.

In the face of these non-negligible disaster risks, there is no emergency plan in the country nor any legislation defining the responsibilities of the various agencies concerned with disasters. The National Emergency Relief Organization (NERO) has little means to act.

In the course of discussions held in Port-of-Spain in February 1980 between the Government and a representative of UNDR0, it was agreed that technical assistance to draft a disaster legislation and strengthen NERO would be most useful. This assistance could be provided by UNDR0 with financing from the UNDP country program Trust Fund. Later discussions with the national Red Cross Society confirmed the need for such assistance.

This project document is, therefore, a follow-up to the discussions held with the Government in February 1980.

II. Objectives of the project

A. Long-range objective: The long-range objective is to develop the capacity of Trinidad and Tobago to prevent or mitigate the disastrous effects of natural phenomena and to cope with natural disasters which will occur as well as such man-made events as oil spills, air crashes or large fires.

B. Immediate objectives: The immediate objectives are to formulate appropriate national legislation, which will clearly define the role of the various national agencies - both within and outside Government - involved in disaster-related matters, and to help prepare adequate emergency plans for the various types of disasters - natural and man-made - which may occur in the country. At the same time, the project team will examine the need to strengthen the technical, statistical and administrative services required for the efficient planning and execution of activities related to disaster prevention, preparedness and relief and to train national personnel in these fields. If needed, it will also help in the formulation of other technical co-operation projects to promote disaster prevention, preparedness and relief.

III. Project activities

The project will be carried out by a team of two experts, one an expert in disaster preparedness and the other a legal adviser.

1. Disaster preparedness expert: He will advise the Government on all aspects of pre-disaster planning including the organizational machinery necessary, the formulation and implementation of emergency plans (roles of the various agencies involved, logistical aspects such as communications, transport, stockpiling of emergency supplies, rubble removal, short-term rehabilitation, warning system, evacuation operations, etc.) and draft disaster legislation which would clearly assign specific roles to the various agencies concerned (NERO, Fire Department, Defense Force, Red Cross, etc.), so as to ensure that each will establish its own plans and react automatically in case of disaster, under the over-all co-ordination of the national disaster relief co-ordinator. The expert will be assigned to Trinidad and Tobago for a duration of three months and shall be assisted during the last month of his mission by a legal expert (see below). He will have extensive experience in the organization and running of emergency relief agencies, the formulation and implementation of emergency plans, the establishment of warning systems, the organization of evacuation operations, the distribution of relief supplies, the containment and cleaning up of oil spills both on land and at sea, etc.

2. Legal expert: This expert will be assigned to Trinidad and Tobago for a duration of one month to assist the disaster preparedness expert in finalizing the draft disaster legislation. He will in particular verify that the draft legislation is well adapted to the legal system of Trinidad and Tobago, and that is realistic and action-oriented. He will have a university degree in law and be well versed in the legal system of the country. In addition to the above task, he will advise on such matters as the suppression of visa requirements for international relief teams and of import quotas and customs duties on relief supplies, the granting of overflight and landing rights to relief missions, the possible participation of Trinidad and Tobago in mutual assistance agreements with neighboring countries, its potential involvement in relief operations abroad, particularly in the Eastern Caribbean area, etc.

3. Training provisions: The two experts provided for in this project will give lectures in their respective fields of expertise during the course of their mission and possibly participate in disaster prevention and preparedness seminars which may be organized in the country. This training will be of a practical nature and based on the study of specific aspects of the disaster prevention and preparedness situation in Trinidad and Tobago.

4. Government inputs: The Government of Trinidad and Tobago will cover the local costs of the project. In particular, it will provide the team with a secretary, a car and driver and adequate office space; it will also cover general expenses for the above and communications and travel expenses for the two experts within the country.

5. Supervision and evaluation of the project: UNDRO will supervise the project throughout and the two experts will be in constant contact both with the UNDP Resident Representative and UNDRO in Geneva. Upon completion of the project, the two experts will submit a report to UNDRO. This report will be examined by UNDRO in consultation with UNDP, and after revision and approval the report will be officially submitted by UNDRO to the Government.

PROJECT BUDGET

	m/m	US \$
<u>11. To be financed from the UNDP country program Trust Fund</u>		
10 <u>PROJECT PERSONNEL</u>		
11 <u>Experts</u>		
11-01 Disaster preparedness expert	3	15,000
11-02 Legal expert	1	5,000
TOTAL		20,000

	m/m	US \$
<u>III. To be provided by the Government</u>		
10 <u>PROJECT PERSONNEL</u>		
11-01 Secretarial staff	3	750
11-02 Driver	3	<u>600</u>
Component Total		1,350
40 <u>EQUIPMENT</u>		
41 Expendable equipment (office supplies)		150
43 Premises		<u>200</u>
Component Total		350
50 <u>MISCELLANEOUS</u>		
53 Use and conservation of equipment (car and typewriter)		300
54 Other (domestic travel of experts)		<u>1,500</u>
Component Total		1,800
GRAND TOTAL OF GOVERNMENT CONTRIBUTION		<u>3,500</u>

Project of the Government of Antigua, Barbados, Dominica
Grenada, Montserrat, St. Kitts - Nevis - Anguilla
St. Lucia and St. Vincent

Title: Regional Programme for Natural Disaster Prevention and Preparedness

Duration: 18 months

Government Co-operating Agencies: CARICOM and national planning agencies

Executing Agency: United Nations (UNDR0)

Date of submission:

Starting Date: November 1980

Government Contribution: \$82,500
(in kind)

Other Contributions: \$325,500

- Multi Island Fund (UNDP): \$100,000
- CARICOM Technical Co-operation Programme: \$100,000
- UNEP (Caribbean Action Plan): \$100,000
- Other bilateral or international agency contributions: \$25,500
- USAID/OFDA possible expert or consultancy services

APPROVED

on behalf of the Government of Antigua
(title and signature)

Date

APPROVED

on behalf of the Government of Barbados
(title and signature)

Date

APPROVED

on behalf of the Government of Dominica
(title and signature)

Date

APPROVED

on behalf of the Government of Grenada
(title and signature)

Date

APPROVED	_____	_____
	on behalf of the Government of Montserrat (title and signature)	Date
APPROVED	_____	_____
	on behalf of the Government of St. Kitts - Nevis - Anguilla (title and signature)	Date
APPROVED	_____	_____
	on behalf of the Government of St. Lucia (title and signature)	Date
APPROVED	_____	_____
	on behalf of the Government of St. Vincent (title and signature)	Date
APPROVED	_____	_____
	on behalf of the Executing Agency (signature)	Date
APPROVED	_____	_____
	on behalf of the UNDP (Multi Island Fund) (signature)	Date
APPROVED	_____	_____
	on behalf of UNEP/Caribbean Action Plan (signature)	Date

I. BACKGROUND AND SUPPORTING INFORMATION

A. Justification for the project

All the islands covered by this project are disaster-prone. The main risks affecting all or most of them are hurricanes, floods, earthquakes, volcanic eruptions and related phenomena such as landslides and water contamination. In 1979 alone, a volcanic eruption affected St. Vincent, hurricane David - and to a lesser extent hurricane Frederic - hit Dominica causing widespread destruction, and floods and landslides occurred in Dominica and Grenada. All these events clearly showed the lack of adequate preparedness and prevention measures and the need to initiate action to remedy the situation.

As a result of hurricanes David and Frederic, which also devastated the Dominican Republic in the Greater Antilles, the Committee of the Whole of the United Nations Economic Commission for Latin America (ECLA) adopted on 19 October 1979 resolution 417 (PLEN. 13) welcoming "the proposal by the Government of the Dominican Republic that the United Nations, and more particularly the Office of the United Nations Disaster Relief Co-ordinator, should study ways and means of setting up specific machinery to cope with the natural disasters that periodically occur in the Caribbean basin". This resolution was endorsed on 9 November 1979 by the General Assembly in resolution 34/18.

Earlier, at the Conference of Health Ministers of the Caribbean Community (CARICOM) held in Antigua on 10-12 July 1979, a resolution had been adopted calling on the Secretary General of CARICOM to "seek technical co-operation from UNDRO ... in arriving at his conclusions about the future role of the Secretariat in this programme area".

The Office of Foreign Disaster Assistance (OFDA) of USAID organized from 10-20 June 1979, in St. Lucia, a Caribbean Disaster Preparedness Seminar, in which UNDRO, CARICOM, PAHO and other organizations participated. The Seminar formulated a number of recommendations presently being implemented with the participation of the governments and agencies concerned. The CARICOM countries represented at the Seminar were particularly vocal in requesting that a Caribbean regional disaster organization be developed.

In January 1980, at the Meeting of Government Nominated Experts to Review the Draft Action Plan for the Wider Caribbean Region, organized by UNEP and ECLA, the question of natural disasters was also considered and recommendations made for action with regard to both disaster prevention and preparedness.

In February 1980, in the course of discussions held in Georgetown, Guyana, between representatives of UNDRO, CARICOM and UNDP, it was agreed that the best way to pull all these threads together would be to focus first on the less developed Eastern Caribbean islands, by implementing a project aiming at developing regional prevention and preparedness activities. It was felt that due to the small size of the countries concerned it probably would not be possible or practical to attempt to establish disaster preparedness and relief machinery in each island. Instead, a project aiming at promoting concrete measures of disaster preparedness and prevention, and which would look at the desirability and possibility of establishing a permanent regional mechanism in the area was deemed preferable.

B. Government participation

In order to ensure good practical involvement of the participating countries in the project, it is proposed to establish a project Advisory Committee composed of representatives of each participating country (Antigua, Barbados, Dominica, Grenada, Montserrat, St. Kitts - Nevis - Anguilla, St. Lucia and St. Vincent). In consultation with the executing agency, each country will designate as national co-operating agency for the project the most appropriate national body. The members of the Advisory Committee will be representatives of these national co-operating

agencies. The Committee will meet at least three times (once before the start of the project, once after eight months of implementation, i.e. at the end of the first phase, and once after fourteen months), with a view to assisting in the formulation of the work programme, examining the progress made in its implementation and making suggestions to improve the contribution of the project to the solution of disaster-related problems in the region. UNDRO, UNDP, CARICOM, PAHO, the regional ECLA Office, the Joint UNEP/ECLA Project on Environmental Management in the Wider Caribbean Area, OFDA/USAID and, if considered desirable, the University of West Indies, will also participate in the meetings of the Advisory Committee.

C. Other related government activities

The results of the UNDP Project (RLA/72/049/B/01/16) on advanced training in meteorology in the English-speaking Caribbean, which is currently being implemented by the World Meteorological Organization, as well as of the project for permanent volcano monitoring to be implemented shortly in St. Vincent within the framework of the UNDP country programme, will be considered as direct inputs to this regional project. So will the work presently carried out by the Seismic Research Unit of the University of the West Indies as well as any other joint regional activities carried out in disaster-related fields in the region by UNDRO, PAHO, USAID/OFDA, UNEP or other entities.

D. Future activities

This being the first regional disaster preparedness and prevention project in the Eastern Caribbean, the need for future assistance -- including the possible establishment of a permanent regional mechanism -- will be determined in the course of its implementation.

II. OBJECTIVES OF THE PROJECT

A. Long-range objectives

The long range objective of the project is to develop the individual as well as the collective capacity of the participating countries to prevent or mitigate the disastrous effects of natural phenomena and to cope with disasters which will occur. As such, the long-range objective is to contribute to the development of the countries concerned by reducing the losses due to disasters in a manner compatible with environmental protection.

B. Immediate objectives

The immediate objectives of the project are to promote and facilitate the adoption of preparedness and prevention measures at the national and regional levels, and in particular:

1. To determine the present situation and trends with respect to the organization and the programmes of the participating countries and to assess the impact of natural disasters on their economies (direct and indirect damage) and the environment.
2. To help governments in the adoption of preparedness measures and the formulation of prevention policies (emergency plans, relief teams, warning systems, vulnerability analysis, land-use legislation, zoning laws, building techniques and codes, public information, restoration of natural resources, environmental management, etc.) and to determine their needs for further technical co-operation in these fields.
3. To determine in this respect the need for a permanent regional mechanism and, should the establishment of such a mechanism be considered necessary, make recommendations with regard to its nature, functions, location, sources of funding and relations to existing national and international agencies, particularly UNDRO.
4. To strengthen the technical, statistical and administrative services needed for the efficient planning and execution of activities related to disaster preparedness and prevention, and to train national personnel in these fields.
5. To help in the formulation of other technical co-operation projects to promote disaster preparedness and prevention and mutual assistance in cases of disaster.
6. To assist in the formulation of mutual assistance agreements between the participating countries in disaster-related matters.

III. WORK PLAN

The project will be carried out in two phases by a regional team of two experts recruited for the duration of the project and assisted during the second phase by a number of short-term consultants. Project activities will be supervised and co-ordinated by the Project Manager who will be heading the regional team of experts.

1. The regional team

The main function of the regional team will be to assist the participating governments in the formulation of concerted policies for disaster preparedness and prevention and to identify the activities and projects which should receive special support. In carrying out these activities, the regional team will co-operate closely with the UNDP Resident Representatives in the area and consult with UNDRO, CARICOM, ECLA and the regional and local offices of WHO/PAHO, FAO, WMO, UNESCO, UNEP and other pertinent agencies.

The regional team will include for the whole duration of the project a disaster preparedness and relief co-ordination expert and a disaster prevention specialist. During the first phase (eight months), when the emphasis is to be on preparedness, the preparedness expert will be the Project Manager; in the second phase, it will be the disaster prevention specialist.

2. Short-term consultants

The project provides for a number of short-term experts, who will carry out, not necessarily in all the countries, studies of a specialized nature. The types of expertise listed and the duration of the assignments of the short-term experts take into account studies already carried out in the region and the existing knowledge of specific risks in the countries concerned. At this stage, it is envisaged to include in the project, for durations of two to three months each, short-term consultants in the following fields: hydrology, meteorology, geology, seismology, volcanology, economics, environmental engineering and legislation. A reserve of three man-months will be kept to respond rapidly to the need for specific expertise in fields which may be identified in the course of the implementation of the project; such consultants will be hired on an ad hoc basis for tasks which are clearly identified and assigned to them by the Project Manager. In the fields of volcanology and meteorology, one of the roles of the experts will be to maintain close co-operation with the projects falling under the umbrella of this regional project (see Section I.C. above).

The schedule of activities to be carried out under this project, assuming it is approved no later than July 1980, would be the following:

Activity	Location	Commencement Date	Duration
Two man regional team (preparedness expert and physical planner)	Project headquarters and countries concerned	November 1980	18 months
Hydrologist	"	July 1981	3 months
Meteorologist	"	July 1981	3 months
Geologist	"	September 1981	3 months
Seismologist	"	October 1981	2 months
Volcanologist	"	October 1981	2 months
Economist	"	October 1981	3 months
Environmental engineer	"	November 1981	3 months
Legal expert	"	November 1981	3 months
Ad hoc consultants	"	To be determined	3 months

A. Description of Project Activities

In view of the urgency of promoting immediate preparedness and prevention measures at both the regional and national levels, the project will focus during its first phase (i.e. during the first eight months) on laying the groundwork for ensuring a prompt response of the countries either individually or collectively in future disaster situations. The second phase will focus more on longer term problems of disaster prevention and preparedness.

Phase I: During the first phase, the regional team will:

- a) Study in close co-operation with the governments and agencies concerned with the situation within the region with respect to disaster preparedness and prevention and make recommendations for its immediate improvement; the team will in particular study the desirability and possibility of establishing a permanent mechanism for disaster preparedness and relief at the regional level and formulate initial recommendations which will be refined and finalized during Phase II of the project.
- b) Disseminate information on disaster-related policies and programmes from other countries which may be of interest and practical value to countries in the region.
- c) Train personnel from the participating countries in various fields related to disaster preparedness such as the formulation and implementation of emergency plans, the setting up of warning and evacuation systems, etc.
- d) Organize technical meetings and seminars for specialists from the participating countries and international experts in order to promote the exchange of information and experience on specific aspects of disaster preparedness and short term disaster prevention.

Phase II: During the second phase, starting at the beginning of the ninth month of the project, the regional team, assisted by the short term consultants, will:

- a) Finalize its recommendations on the desirability and possibility of establishing a permanent mechanism for disaster preparedness, relief and prevention at the regional level, and in particular make specific recommendations on its location, modus operandi, source of funding, staffing, date of establishment, etc., bearing in mind the worldwide responsibilities of UNDRO in these fields.
- b) Train personnel from the various countries in the longer term aspects of disaster prevention (vulnerability analysis, land-use legislation, zoning laws, building codes and building techniques, public information, environmental management, etc.).
- c) Organize technical meetings and seminars for specialists from the participating countries and international experts in order to promote the exchange of information and experience on longer term prevention and preparedness measures and sound environmental management.

d) Provide advice on specific aspects of disaster preparedness and prevention at the request of participating governments.

The regional project will give particular emphasis to the provision of technical co-operation and training:

1. Technical co-operation and consultative services

The regional team will evaluate the situation of each participating country with respect to disaster risks, disaster preparedness and disaster prevention, identify and formulate programmes and projects in order to improve the existing situation, and determine in close co-operation with each government the type of further assistance it may need from abroad or be in a position to provide to other countries in the region. Where necessary, the regional team will also provide upon request from participating countries short-term consultant services on specific aspects.

2. Training activities

While the experts working within the framework of the project will in the course of their activities have an important training role in respect of the personnel of the co-operating agencies, the shortage of qualified staff in certain disaster-related fields makes it necessary to provide for special training activities. The main purpose of such training will be to make it possible for nationals from the participating countries to benefit from the knowledge and experience acquired during the implementation of the regional project or as a result of other prevention and preparedness activities. Training will consist in the following:

a) Participation in disaster prevention and preparedness seminars and courses or possibly organization of such seminars and courses in co-operation with other international, regional or national bodies. This training will be of a practical nature and based on the study of specific national cases, using in particular the results of the study and advisory mission mentioned above (see also sub-paragraph c) and section C2. below).

b) Training of personnel from participating countries in disaster prevention and preparedness through their integration in the regional team.

c) The organization, in co-operation with national or regional institutes, of three sub-regional seminars dealing with, i) the organization and co-ordination of disaster relief, ii) problems related to the prevention of, and preparedness for, disasters which may result from hurricanes, floods, land erosion, etc., and (iii) prevention of, and preparedness for, disasters of seismic or volcanic origin. The seminars, which will last one week each and take place, respectively, after six, ten and fourteen months of implementation of the project, will be attended by two representatives from each country who will be responsible for the formulation and implementation of national policies in these fields. If possible, during the implementation of the project, a meeting will also be organized on the practical applications and possible improvements of existing methodologies for vulnerability analysis; the participation of the Caribbean Development Bank will be sought for such a meeting.

B. Description of UNDP, CARICOM, UNEP, UNDRO and possibly USAID inputs

1. Assignment of international staff

As mentioned above, during the first phase (the first eight months) of the project, when the emphasis is to be on disaster preparedness and short-term action generally, the disaster preparedness specialist will be the Project Manager. During the second phase of the project, the disaster prevention expert will take over this function. The Project Manager will be responsible for the detailed formulation of project activities and the assignment of specific tasks to the members of the regional team and short-term experts for the implementation of the project. He will supervise and co-ordinate all the project activities and report on progress made until completion of the project (see section E).

a) Preparedness Expert (Project Manager Phase I)

This expert will have extensive experience in the organization and running of emergency relief agencies, the formulation and implementation of emergency plans (including logistical aspects such as communications, transport, stockpiling of emergency supplies, rubble removal, short-term rehabilitation, etc.), the establishment of warning systems, the organization of evacuation operations, etc. He will have to travel extensively in the region.

b) Disaster Prevention Expert (Project Manager Phase II)

The expert shall have a university degree in physical planning and good experience in activities aimed at preventing the potentially disastrous effects of natural phenomena. He shall have experience in particular in such fields as risk analysis, the formulation of land-use legislation and zoning laws and the implementation of other preventive measures. As the physical planner on the team he will advise the participating countries on the best ways of adapting existing national legislations to specific disaster risks and of making use of the results of the work of the experts in seismology, volcanology, hydrology, meteorology and geology; he will co-operate closely with the national agencies in charge of regional and urban planning. He will have to travel extensively in the Eastern-Caribbean region.

c) Short-term Experts

i) Expert in hydrology (3 months): This expert will have a university degree and practical experience in applied hydrology. He will advise the participating countries and the regional team on the prevention of floods and landslides and, in co-operation with the expert in meteorology, on the possibilities for the establishment of flood warning systems, especially where flood risks may exist. He will work in close co-operation with the national, meteorological and hydrological agencies and those with responsibilities in physical planning.

ii) Expert in meteorology (3 months): This expert will have a university degree and practical experience in meteorology, particularly tropical meteorology and hurricanes. He will advise the participating countries and the regional team on possibilities for improving the existing system for the forecasting of potentially disastrous natural phenomena (tropical storms, hurricanes, etc.) and the dissemination of warnings. He will work in close co-operation with the meteorological agencies of the countries concerned.

iii) Geologist (3 months): This expert will have a university degree in geology and practical experience in such fields as the assessment of landslide risks. He will advise the participating governments on disaster risks due to specific geological conditions and measures to reduce such risks. He will work closely with existing institutions doing work in geology and with those responsible for physical planning.

iv) Expert in earthquake engineering (2 months): This expert will have a university degree and practical experience in seismology and earthquake engineering. He will, inter alia, provide advice to the participating countries and the regional team on the possibility of carrying out seismic microzoning studies in certain areas and translating them into adequate zoning laws. He will work closely with the Seismic Research Unit of the University of the West Indies in Trinidad and Tobago, making use of the results of their work, and with the various national agencies with responsibilities in physical planning.

v) Expert in volcanology (2 months): This expert will have a university degree and practical experience in volcanology. He will advise the participating countries where volcanic risks exist and the regional team on the nature and extent of these risks, and help in having them adequately taken into consideration in the various activities of the project. He will work in close co-operation with the Seismic Research Unit of the University of the West Indies in Trinidad and Tobago, the various national agencies with responsibilities in physical planning and the volcano monitoring project in Saint Vincent.

vi) Economist (3 months): This expert will have a university degree in economics and experience in disaster-related fields. His main task will be to assess the impact of natural disasters on the economics of the participating countries, taking into account both the direct and indirect effects, to make projections of the potential impact of future disasters and to draw conclusions for the long-term development policies of the participating countries. He will have to travel extensively in the region.

vii) Environmental engineer (3 months): This expert will have a university degree in environmental planning or natural resource management, or chemical or civil engineering, and experience in tropical ecosystems.

He will advise the participating governments and the regional team on the management of natural resources as buffers to mitigate the impact of natural disasters, the assessment of the environmental impact of developmental activities which could result in the deterioration of the ecosystems that act as natural buffers and the assessment of measures to restore natural ecosystems disrupted by the effects of disasters. Generally speaking, he will ensure that all prevention and preparedness measures recommended are compatible with environmental protection and sound environmental management practices.

viii) Expert in legislation and international agreements (3 months):

This expert will have a university degree in law and practical experience in the formulation of international legislation and agreements. He will advise the regional team and the participating countries on the legal aspects of the mutual assistance agreements which might be concluded between the participating countries and of the possible establishment of a permanent regional machinery for natural disasters. He will also advise on such matters as the suppression of visa requirements for international relief teams and of import quotas and customs duties on relief supplies, the granting of overflight and landing rights to relief missions, etc.

ix) Other short-term experts: A total of 3 man-months are provided for the carrying out of specific studies which may prove necessary during the implementation of the project.

x) Travel and subsistence costs of the experts: In view of the need for the experts working within the project to travel extensively in the region, a total of \$10,000 is provided to cover travel and subsistence costs for the duration of the project.

2. Training provisions

The experts provided for in the project will give lectures in their respective fields of expertise: the organization, venue and timing of, as well as participation in, these meetings will be determined by the Project Manager in the course of the implementation of the project. In addition, a provision of 30,000 dollars is made for the organization of, and participation in, the above-mentioned seminars or meetings (para 2.c) p. 10).

3. Organization of three meetings of the project Advisory Committee

A provision of 15,000 dollars is made to cover the participation costs (travel and per diem) of two representatives from each country (see section B above) and of representatives of UNDRO, UNDP, CARICOM, and OFDA.

4. Supplies and equipment provided by contributing Agencies

<u>Expendable equipment</u>	<u>Delivery date</u>	<u>Cost</u>
Office supplies	November 1980	4,000
<u>Non-expendable equipment</u>	<u>Delivery date</u>	<u>Cost</u>
Typewriter	November 1980	500
Calculator	"	500
Other (books, etc.)	"	500
Car	"	6,000

5. Miscellaneous

A total amount of \$5,000 is provided for miscellaneous expenses, including maintenance of equipment and reports.

C. Government inputs

1. The government of the country where the project will be headquartered will contribute to the local costs of the project. In particular, it will provide a) one secretary and one driver; b) adequate office space and furniture; c) general expenses related to a) and b) above; and d) communications.

2. In addition, all participating governments will provide similar facilities to the project staff in the course of the missions which they will carry out in the various participating countries within the framework of the project. They will also make available the necessary local technical personnel as agreed in each case between the Project Manager and the government concerned, in consultation with the UNDP Resident Representative. Each government will also contribute to the dissemination of the results of the project in the course of its execution and afterwards.

D. Supervision and evaluation of the project

1. The Project Manager will prepare, in co-operation with the UNDP Resident Representative, progress reports on the activities of the project which will be submitted to the Executing Agency and considered at the meetings of the Advisory Committee (see section B). The first such progress report will be prepared after four months of implementation of the project, the second towards the end of the first phase (8 months), and the third one after one year. The final report will be examined jointly by UNDR0, CARICOM, UNEP, OFDA and the governments of the countries concerned for possible future action.

IV. PROJECT BUDGET COVERING UNDP, CARICOM, UNEP AND UNDRO CONTRIBUTIONS

	Total		1980		1981		1982	
	mm	\$	mm	\$	mm	\$	mm	\$
10. <u>PROJECT PERSONNEL</u>								
11. <u>EXPERTS</u>								
11-01 Disaster prevention expert (Project Manager)	18	72,000	12	8,000	12	48,000	4	16,000
11-02 Preparedness expert	18	72,000	12	8,000	12	48,000	4	16,000
11-03 Hydrologist	3	12,000			3	12,000		
11-04 Meteorologist	3	12,000			3	12,000		
11-05 Geologist	3	12,000			3	12,000		
11-06 Earthquake Engineer	2	8,000			2	8,000		
11-07 Volcanologist	2	8,000			2	8,000		
11-08 Economist	3	12,000			3	12,000		
11-09 Environment Engineer	3	12,000			3	12,000		
11-10 Legal expert	3	12,000			2	8,000	1	4,000
11-11 Short-term experts	3	12,000			2	8,000	1	4,000
113 Administrative Support Personnel		10,000		1,000		7,000		2,000
116 Mission costs		10,000		1,000		7,000		2,000
119 Component total	61	264,000	4	13,000	46	198,000	11	48,000
130 <u>TRAINING</u>								
132 Seminars and meetings (a)		45,000				30,000		15,000
140 <u>EQUIPMENT</u>								
141 Expendable equipment		4,000		2,000		2,000		
142 Non-expendable equipment		7,500		7,500				
149 Component total		11,500		9,500		2,000		
150 <u>MISCELLANEOUS</u>		5,000		1,000		3,000		1,000
199 <u>GRAND TOTAL</u>		325,000		28,500		233,000		64,000

(a) including the meetings of the Project Advisory Committee

V. PROJECT BUDGET COVERING GOVERNMENT CONTRIBUTIONS IN-KIND

A. Contribution by each country to the servicing of the missions carried out by the regional team and of the three seminars

	Total		Total		Total		Total	
	mm	\$	mm	\$	mm	\$	mm	\$
<u>110 PROJECT PERSONNEL</u>								
111-01 Secretarial Staff	2	500			1	250	1	250
111-02 Driver	1	200			1	200		
111-03 Messenger	1	200			1	200		
119 Component total	4	900			3	650	1	250
<u>140 EQUIPMENT</u>								
141 Expendable equipment		500	100		200		200	
143 Premises		2,000			1,500		500	
149 Component total		2,500	100		1,700		700	
<u>150 MISCELLANEOUS</u>		4,000	500		2,500		1,000	
<u>199 GRAND TOTAL</u>	4	7,400	600		3 4,850		1 1,950	

B. Additional contribution of the host country (provision of services to the headquarters of the project)

	Total		1980		1981		1982	
	mm	\$	mm	\$	mm	\$	mm	\$
<u>PROJECT PERSONNEL</u>								
101 Secretarial staff	18	4,500	2	500	12	3,000	4	1,000
102 Driver	18	3,600	2	400	12	2,400	4	800
103 Messenger	18	3,600	2	400	12	2,400	4	800
Component total	54	11,700	6	1,300	36	7,800	12	2,600
<u>EQUIPMENT</u>								
Expendable equipment		2,500		500		1,500		500
Premises		7,500		800		5,100		1,600
Component total		10,000		1,300		6,600		2,100

	Total	1980	1981	1982
	mm \$	mm \$	mm \$	mm \$
<u>MISCELLANEOUS</u>				
Use and conservation of equipment	4,000	500	2,500	1,000
Other	5,000	700	3,000	1,300
Component total	9,000	1,200	5,500	2,300
<u>GRAND TOTAL</u>	30,700	3,800	19,900	7,000

IV. Emergency Operations Centers (EOC's) Summary Statement and Comments

One regional and 13 country EOC projects were submitted in this category. The regional project makes an interesting addition to the various proposals heard over time concerning the creation of a regional disaster organization or organizations for the Caribbean. It proposes the initial establishment of two regional emergency relief operations centers to serve as base stations for linkage to country communications centers, and, further, suggests that the center also so assume some responsibility for coordinating and promoting preparedness and prevention activities. As in the case of the more geographically limited project submitted by UNDR0, it warrants consideration when the question of appropriate disaster preparedness and prevention functions is more completely reviewed. This project does seem to have at least one advantage in its broad pan-Caribbean applicability. It is not unlike a plan being explored with interest in a preliminary way by the European Economic Community and the Office of U.S. Foreign Disaster Assistance in their roles as potential donor/support organizations.

Since an Emergency Operations Center is such an essential element in a national disaster preparedness system, it is assumed that other countries, beyond the 13 that have expressed interest in EOC projects, will upon review of the material developed so far, wish to consider becoming associated with the project.

As a final comment in this connection, most of the world's disaster experienced officials agree that a national EOC, no matter how modest, is essential to disaster relief response. In that context, the "EOC" is viewed as including not just the safe building, but the staffed disaster organization which accompanies it, the national and international relief systems employed and its communications and emergency power equipment.

Dalton