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IDNDR PROFOSAL

NATURAL DISASTERS IN SOUTH AMERICA

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JUSTIFICATION

Statistics published by the Swedish Red Cross point to the increasing risk from natural events. The annual rate of lives lost due to natural disasters during the seventies was about seven times higher (142,920) than during the sixties (22,570). The risk is increasing exponentially, whereas the hazard itself remains at a constant level.

The number and characteristics of natural events which occur constantly has not changed with time, to any significant extent. The higher death toll and number of people affected by loss of home, job, physical incapability or a disrupted social structure, has to be ascribed to a lack of or inadequate preparedness and preventive measures, to the migratory processes that concentrate populations into urban enclaves without due regard to proper land use, and to a general deterioration of the environment.

Where do natural disasters do the most damage and leave deeper scars? through the period from 1960 through 1981, Nicaragua, Peru, Iran, India, China and Bangladesh suffered over a million and a half disaster-related deaths; these are all underdeveloped countries. The numbers of fatalities are part of the picture. Other, apparently less dramatic casualty statistics, but just as serious, refer to social, health and economic effects such as becoming handicapped or suffering mental disarray; loss of the source of livelihood; blocked roads, bridges are lost and remain unrepaired for years; the same happens to lifelines, industrial facilities, energy supply and housing in general.

Post-event analysis of the Nevado El Ruiz volcanic eruption in Colombia, the Mexico city earthquake, landslides throughout the Andes and Caribbean hurricanes, have brought out the fact that with adequate prevention measures, losses would have been reduced significantly.

Houses, schools, shops and roads are often built on flood plains in valleys prone to flash floods, mud flows or avalanches or on volcanic slopes as is the situation of Quito, Arequipa, Santiago, Masaya and Mendoza, where deforestation and other environmental damage is taking place. This problem is closely related to development, quality of life and conservation of the environment. Thus it is necessary to learn in a systematic way the behaviour of the principal natural disasters, the societal response and that of the institutions, and the actions which must be carried out to prevent its most destructive effects.

It is proposed to carry out a diagnosis of the situation in the region, on the basis of the experiences accumulated in many countries, to be found in reports, studies, videos and testimony of various sorts. It is necessary to analyze systematically the available material and to find answers to the following leading questions:

- What do we know at present?
- What is essential that we need to learn in order to be able to formulate and adopt national prevention policies?
- What must be done to effectively prevent and mitigate the destructive effects of disasters originated by natural phenomena?

The purpose of the work proposed is coincident with the objective of the International Decade for Natural Disaster Reduction (IDNDR); also, it is hoped it will contribute to the region's efforts to meet the goals of the Decade.

Objective

To contribute significantly to prevention and mitigation of natural disasters and to provide a useful guide for the establishment of regional priorities and as an important stimulus to the IDNDR National Committees for the IDNDR.

Specific Objectives

The specific objectives of the Program are:

- To systematize regional disaster hazard and risk data available, relevant to the principal disasters which affect the region, from the point of view of scientific and technical knowledge and of the social and institutional response and behaviour;
- To produce recommendations for policies and actions to be implemented in order to improve the level of natural disaster prevention and mitigation measures;
- To identify specific issues which require further study and research.

Scope of the Program

The natural disasters which are to be considered, because of their greater hazard potential, are:

- Floods
- Inundations (El Niño included)
- Earthquakes
- Tsunamis
- Volcanic eruptions

SCOPE OF THE PROGRAM

NATURAL DISASTER	ARG	BOL	BRA	COL	CHI	ECU	PAR	PER	TRI	URU	VEN
Landslides	P	X	X	X	X	X	P	X	O	P	X
Volcanic eruptions	P	P	O	X	X	X	O	X	O	O	O
El Niño	O	P	P	X	X	X	P	X	O	P	O
Floods	X	X	X	X	P	X	X	X	P	X	X
Wind storms	X	X	X	X	P	X	X	X	X	X	X
Earthquakes	X	P	P	X	X	X	O	X	X	O	X
Tsunamis	O	O	O	X	X	X	O	X	O	O	O

X Significant hazard
P Potential hazard
O little or no hazard

AAG CERESIS

Figure 1, SCOPE OF THE PROGRAM, lists those disasters considered for each country. In each case, their relative potential for occurrence and damage is indicated: (X) for high incidence, (P) average and (O) low incidence, or none at all.

From a geographic point of view, the Program includes the following countries:

- Argentina
- Bolivia
- Brasil
- Colombia
- Chile
- Ecuador
- Paraguay
- Peru
- Trinidad-Tobago
- Uruguay
- Venezuela

Thematically, the following are considered:

- Scientific knowledge available for pertinent geophysical and geological hazards;
- Role of public institutions, civil society and national and international scientific communities;
- Role of international cooperation;
- Economic and social impact of natural disasters;
- Impact on health.

Work Plan and Activities

- A multidisciplinary team of specialists on natural disasters will review and systematically organize documentary sources and available information; they will interview qualified specialists, public authorities and institutional leaders in each country;
- The most important Documentation Centers will be visited both in and outside the region;
- Analysis of the role of government, society, the scientific community, mass media, international cooperation, in the general management of natural disasters and vis-a-vis the response capacity of each country;
- Organization and conduction of workshops, sub-regional, as may be necessary;

- Analysis of the information obtained, preparation and publication of monographs, reports and executive summaries;
- Dissemination of results.

Throughout the duration of the Program, particularly during the "dissemination of results" stage, CERESIS shall work closely with the IDNDR National Committees of each country in the region.

Institutional Framework

The program will be centralized at the CERESIS office in Lima, Peru. CERESIS is an International Organization (see brochure) created in 1966 by the United Nations Education, Science and Culture Organization (Unesco) and the Government of Peru. In 1971, a Multinational Agreement established CERESIS as an autonomous inter-governmental regional organization. The Governments of Argentina, Bolivia, Colombia, Chile, Ecuador, Peru, Spain, Trinidad-Tobago, Uruguay and Venezuela have subscribed the Agreement and are Member States of the Organization; Brasil will join formally, in the near future.

CERESIS was created to improve the capacity of the Member States to cope with and mitigate, as a result of concerted regional action, the effects of natural disasters, - earthquakes, volcanic eruptions, tsunamis and associated phenomena, by promoting and giving support to scientific, technical and social activities oriented to that basic objective.

CERESIS has carried out over the years, several regional programs and projects, with multidisciplinary and multinational teams. The results of the most recent of these projects, concerning volcanic risk, are contained in the publications Riesgo volcánico, evaluación y mitigación en América Latina; Aspectos sociales, institucionales y científicos and El Nevado El Ruiz y el riesgo volcánico en América Latina, published in 1989, and in a video produced on the same subject, for the purpose of sensibilizing and capacitation.

EXPECTED RESULTS

1. Regional report: On the principal findings of the investigation carried out, with emphasis on the possibilities for regional concertation and cooperation.
2. Executive Summaries for each country: Diagnosis of the situation and emphasis on the recommendations.
3. Monographs by type of disaster: Specially oriented to enhance the regional understanding of the various aspects related to each type of disaster.

4. Aide-Memoire for National Seminars: Synthetic documents designed for the promoters of the National Seminars.

From the point of view of the region's capacity to implement prevention and mitigation measures, it is hoped that a most important result of the program will be to facilitate the establishment of and to strengthen a regional network of concerned institutions and experts.

DISSEMINATION OF RESULTS

1. Through the Network: CERESIS has a network of institutions through which it is able to distribute pertinent documentation.

In addition, CERESIS shall establish a specific link with the Scientific and Technical Committee for IDNDR, in order to provide this Committee with products resulting from the program, and shall also establish the pertinent coordination to reach other countries and institutions, via UNDRR.

2. National Seminars: When the products of the Program are ready, CERESIS shall request the IDNDR National Committees to organize "National Seminars on Prevention of Disasters" and provide them with relevant information.

These Seminars will be oriented to:

- a) Sensibilize: Promoting interest in the subject of natural disasters in government, schools, universities, mass media, industry, etc. calling attention to the collective and individual responsibility for prevention and mitigation.
 - b) Capacitate: Organizing activities with key groups, previously identified in accordance with the country's characteristics and priorities, as well as the specific areas vulnerable to natural disasters.
3. Non-government Organizations for Development (NOG): NGOs have grown in numbers and importance in the past years; organizations such as the United Nations, the World Bank and the Interamerican Development Bank work with NGOs. It is estimated that in the countries involved in the Program there are at least 1500 NGOs. In general, they are institutions which are not involved with natural disasters except during post-disaster phases. CERESIS proposes to involve NGOs as much as possible in the natural disaster aspects of development, using the results derived from the Program and by activities to sensibilize and capacitate.

Involvement of the Organization of American States

CERESIS and the Natural Hazards Project/Department of Regional Development and Environment of the OAS are exploring the possibility of combining forces to present this proposal to funding agencies. The following points will be emphasized and/or introduced:

- Emphasis on country-specific products that have an immediate application; the content of the products are to be taken not only as far as possible, but will introduce new forms of communicating and using the information, as applicable, in a way that the user can continue to update country data - thus developing a strong regional network of institutions which are both purveyors and users of information, in a fairly standard framework easily shared.
- The creation, and instruction for use of PC data bases by development planning and operational ministries, institutions and NGOs, which will allow them to easily relate proposed project activity areas to natural hazard information, including in map formats (using the very inexpensive geographic information system - GIS - software program which is easy to learn).

PRELIMINARY

BUDGET.

(36 months - in US\$)

<u>Honorarium.</u>		140,400
Program Director (\$1,500 x 36m)	54,000	
Expert (\$1,500 x 36m)	54,000	
Expert (\$600 x 36m)	21,600	
Asistant (\$300 x 36m)	10,800	
<u>Consultants</u>		40,000
(2 consultants x 10 countries x \$2,000)	40,000	
<u>Secretarial support and administration.</u>		18,000
Secretary (\$300 x 36m)	10,800	
Supplies	1,800	
Photocopies	1,800	
Comunications (phone, fax, mail)	3,600	
<u>Air travel.</u>		9,768
1 Lima-San José-Delaware-Boulder-Lima	1,608	
1 Lima-Ginebra-Lima	1,326	
2 Lima-Stgo.Chile-Buenos Aires-S.Juan-Montevideo-Lima (\$959.88 c/u)	1,920	
2 Lima-La Paz-Asunción-Rio de Janeiro-Sao Paulo-Recife-Lima (\$1,619.94 c/u)	3,240	
2 Lima-Quito-Bogotá-Caracas-Lima (\$836.76 ea.)	1,674	
<u>Subsistence</u>		14,850
Geneve (1 Experto x 15 días x \$150)	2,250	
Costa Rica and USA (1 expert x 20 días x \$150)	3,000	
South America (2 experts x 12 cities x 4 días x \$100)	9,600	
<u>Disemination materials</u>		24,000
1 Book (250 pp x 1,500 issues)	4,500	
10 Executive Summaries (60 pp x 1,000 each; \$1,200 EA.)	12,000	
5 Monographs (100 pp x 500 each; \$1,500 ea.)	7,500	
	SUB TOTAL	247,018
<u>Miscellaneous</u>		12,352
(5%)		
	TOTAL	US\$ 259,370