Sciences of the United States, during the inaugural ceremony for the VIIIth World Conference on Earthquake Engineering, held in San Francisco, California, in 1984.

In response to that initiative and to the United Nations resolution, Peru set up a National Committee for IDNDR, chaired by the head of INDECI and composed by representatives of institutions which investigate natural disasters or use the findings of such research for disaster prevention and mitigation. The National Committee for IDNDR drew up the National Programme for disaster Prevention and Mitigation in Peru (PNPMDP) between 1987 and 1989 and began implementing it in 1989.

Between 1989 and 1992, activities were concentrated in the Grau region, which has a surface area of 41,000 sq. km. and is located in the far north of Peru, up against the border with Ecuador. Details of the programme were announced at the IXth World Conference, held in Tokyo and Kyoto in 1988, and results for the period 1989 to 1992 were presented at the Xth World conference, held in Madrid in 1992. In the Grau region, the most frequent and destructive disasters are earthquakes and the El Niño phenomenon, which causes flooding and landslides.

This report presents a summary of the findings of the research and the disaster prevention and mitigation measures carried out between July 1992 and June 1995 under the Disaster Mitigation Programme in Peru (PMDP), which coincided with the PNPMDP during that period and was the latter's most important component activity. The research focuses on the south-western coast of Peru, a seismic gap is said to exist. The phenomena dealt with in the research are earthquakes, tsunamis and volcanic activity.

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DISASTER MITIGATION PROGAMME IN PERU (PMDP)

The PMDP has had two executing agencies: the United Nations Department of Humanitarian Affairs, based in Geneva (DHA-Geneva), and the National Civil Defence Institute of Peru (INDECI). A number of Peruvian institutions took part in the programme. Those most actively involved are mentioned under their respective areas of participation, and their studies - professional theses for the most part - are listed on the last page of this publication. Funding was provided primarily by the Government of Canada.

The PMDP comprises three fields of action:

- Mitigation of seismic, volcanic and flood risks in the city of Arequipa;
- Reduction of seismic and tsunami risks on the south-west coast of Peru; and
- Organization of the National Data Bank for Disaster Prevention and Mitigation in Peru (BNDPMDP).

As may be noted, programme implementation between July 1992 and June 1994 was centred on the south-western part of the country. The reason for this concentration is that seismologists from several countries agreed that southern Peru and northern Chile constitute a common zone of seismic gap, as there have been no major earthquakes in the subduction zone since 1868. In that year, a devastating earthquake demolished the communities situated on the strip between Camaná-Peru and Pisagua-Chile at an average distance from the coast of 120 to 150 kilometres. Arica, Ilo and other coastal towns were destroyed by tsunamis. In Arica, the United States Navy ship Wateree was beached about 300 metres inland.

Stuart P. Nishenko, in his article "Seismic Potential for Large and Great Interplate Earthquakes Along the Chilean and Southern Peruvian Margins of South America: A Quantitative Reappraisal", published in Geophysical Research, Vol. 90 (April 1995), states that in the common zone of seismic inactivity in southern Peru and northern Chile, there is a conditional probability, estimated at between 50 and 100 per cent, of a major earthquake occuring between 1986 and the year 2000. He also says that of the total area he studied, comprising southern Peru and the entire territory of Chile, the Peruvian sector occupies first place in classification by rank.


FIG 1
STUDIED LOCALITIES ⊙
MICROZONATION: ie TACNA
SEISMIC RISK: ⊗
TSUNAMI: ✓
LEYEND
INTERNATIONAL BOUNDARY
DEPARTAMENTAL BORDER
HIGHWAYS
COL.
ECU.
PERU
BRASIL
BOL.
CHILE
ARG.
PACIFIC OCEAN
ATLANTIC OCEAN
CHALA
PAMPACOLCA ⊗
CHUQUIBAMBA ⊗
AREQUIPA ⊗
TITICACA LAKE
PACIFIC OCEAN
ISLAY
MOLLENDO
MEJIA
MOQUEGUA ⊗
PERU
ILO
TACNA
BOLIVIA
BOCA DEL RIO
CHILE