



Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura

Fortalecimiento del Sistema Regional de Alerta ante Tsunami en Chile, Colombia, Ecuador y Perú

# Newsletter

# 1

UNESCO DIPECHO VII Project

Strengthening the Regional Tsunami Early Warning System in Chile, Colombia, Ecuador and Peru

Issue N° 2 01/2012

UNESCO

## EDITORIAL

The members of the Working Group of UNESCO's DIPECHO Project wish to share with our readers the first newsletter of the year. In this issue, you will find news on our activities already carried out and upcoming ones regarding tsunami preparedness for the region. In addition, you will find articles that outline the progress of our countries in strengthening the Tsunami Early Warning System and a section with informative data on the subject which we hope may be useful.

On behalf of the project team we wish to use the opportunity to thank all those with whom we work daily for the reduction of risks in dealing with a tsunami in the South Pacific.

We want to take advantage of this issue to convey our best wishes for 2012 to everybody.

## PROJECT ADVANCES

### The National Committee for the Tsunami Early Warning Systems was created in Ecuador.

UNESCO Quito, in coordination with Ecuador's National Risk Management Secretariat, held a National Workshop on the Tsunami Early Warning Systems (TEWS) in the City of Esmeraldas, from September 26 - 28.

One of the key outcomes of the National Workshop was an agreement for the creation of a National TEWS Committee. This Committee will be integrated by four main institutions: the National Risk Management Secretariat, the Oceanographic Institute of the Ecuadorian Navy, the Geophysical Institute and the Ministry of Education.

UNESCO and the Permanent Commission for the South Pacific will be providing technical assistance within the Committee.

Starting on February 2012, monthly meetings will be held in order to review and strengthen existing protocols, define inter-institutional and intra-institutional coordination, and finally, to establish and execute a joint work plan for the strengthening of the tsunami early warning system in Ecuador.



The work of the Committee will fall within the Regional Tsunami Early Warning System in the Southeast Pacific, which consists of institutions and technical experts from Colombia, Ecuador, Peru and Chile.

**For further information, please contact:**  
**Pernille Petersen, [ph.engell-peterson@unesco.org](mailto:ph.engell-peterson@unesco.org)**

### Colombia reforms the coordinating institution of the National Disaster Prevention and Relief system

Colombia, one of the pioneer countries in Latin America in the development of policies and institutions for risk management in the 1980's, has just reformed the structure of the Risk Management Directorate for Disaster Prevention and Relief (DGR). The change involves the creation of a National Unit for Disaster Risk Management (UNDGR). This new unit is part of a series of reforms made by the Colombian Government, which seeks a modernization of the management and coordination. Furthermore, it includes the creation of the Ministry of Environment and Sustainable Development, thus adopting a comprehensive vision of disaster risk management.

One of the principal features of the UNDGR new structure is to recover one of its initial characteristics: to have "legal capacity, administrative and financial autonomy, equity capital from the decentralized level of the Executive Branch of the national order assigned to the Administrative Department of the Presidency of the Republic".

In particular, the Colombian lesson comes mainly from continuous disasters of great magnitude: the Tumaco tsunami in 1979, the earthquake in Popayan in 1983 and the avalanche in Armero in 1985. The UNDGR was created in a context of a complex situation of emergencies and disasters associated

with an increase in the frequency and intensity of precipitations during a better part of 2010 and 2011. These have triggered multiple floods (urban, rural), landslides and avalanches. Approximate figures calculate victims at 2.5 million during 2010 and in 2011 this amount is close to 350 thousand persons.

In addition, a draft of the Law modifying Decree-Law 919 of 1989 which created and organized the National Disaster Prevention and Relief System is presently being processed, clearing the way for new concepts in Risk Management. This decision grants new capacities for the management and coordination of national entities facilitating an effective reduction of existing risks and prospective management of future risks through the inclusion of prevention in the planning, education and culture of the country. UNESCO's DIPECHO Project will closely monitor this process of change and will give technical support the directorate responsible for the tsunami area in this new National Unit for Disaster Risk Management (UNDGR).

**For further information, please contact:**  
**Oscar Guevara, [oscaraato@gmail.com](mailto:oscaraato@gmail.com)**



© G. Santillán  
Tumaco, Colombia



Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura

Fortalecimiento del Sistema Regional de Alerta ante Tsunami en Chile, Colombia, Ecuador y Perú

# Newsletter

UNESCO DIPECHO VII Project

Strengthening the Regional Tsunami Early Warning System in Chile, Colombia, Ecuador and Peru

2

Issue N° 2 01/2012

UNESCO

## Coordination for the improvement of the Tsunami Early Warning Systems in Peru

To improve the Tsunami Early Warning System in Peru, a coordinating meeting was held in November 2011 between members of the National Operations Directorate of the National Civil Defense Institute (INDECI), members of the seismology area of the Geophysical Institute of Peru (IGP), and staff from the Directorate of Hydrography and Navigation of the Peruvian Navy (DHN), all of them representatives of the Tsunami Early Warning System.

The objective of the meeting was to analyze the delay in the flow of information on the occurrence of earthquakes. Prior to this, the IGP has managed to arrange for resources for the improvement of its satellite system, the achievement of a better flow of information, inter-institutional support and defining of the functions of each member of the system still is necessary.

The Geophysical Institute of Peru along with the Peruvian-Japanese Center for Seismic Research and Disaster Mitigation – CISMID, are implementing the project “Enhancement of Earthquake and Tsunami Disaster Mitigation Technology in Peru”, managed through the fund of Japanese International Cooperation (JICA), whose objective is to develop technologies and measures for the evaluation and mitigation of tsunamis triggered by earthquakes great in magnitude.

In order to reach one of the objectives of UNESCO’s DIPECHO Project, centered on the improvement of the Early Warning System in Peru, it is necessary to join efforts with institutions which work in this theme. For this purpose, the Workshop on the Strengthening of the National Early Warning System in Peru, scheduled to take place in Lima, January 12 and 13, will be attended by representatives from the JICA project who will expound on the work that is being carried out in Peru. This National Workshop will also have the participation of representatives

from the 10 local governments on the Peruvian coast, representatives of INDECI, the Directorate of Hydrography and Navigation, the Geophysical Institute of Peru and the Ministry of Education. Likewise, it will be attended by international experts such as Carlos Ivan Marquez, Director of Colombia’s National Unit for Disaster Risk Management, who will speak on his country’s experience on the theme; and Bernardo Aliaga, Technical Secretary of the Pacific Tsunami Warning System and Specialist at UNESCO’s Intergovernmental Oceanographic Commission, who will present the topic of Standard Operating Procedures in tsunami warnings.

It is expected that through the workshop, a milestone will be attained in the improvement of the Tsunami Early Warning System and a consensus reached on aspects in the process for the improvement of the same.

**For further information, please contact:**  
**Gabriela del Castillo,**  
**gdelcastillov@gmail.com**



© F. Ulloa  
 Taller DIPECHO UNESCO, Callao

## More than 20 Latin American Professionals trained in Tsunami Modeling

In coordination with the Hydrographic and Oceanographic Service of the Chilean Navy – SHOA, the International Course on Tsunami Modeling was held in the city of Valparaiso in order to develop and train high level professionals that may jointly prepare a research on tsunamis in the countries of the Pacific applying the NEOWAVE Model. This model allows one to describe tsunami generation and propagation, implementing a refined scheme that utilizes a different resolution for each process. The course included practice exercises such as the modeling of the tsunami which occurred in the Bahía de Talcahuano, Bio Bio Region, Chile, on February 27, 2010.

This course contributed to the training of professionals qualified in the preparation of inundation maps, technical tool useful to reduce risk conditions for coastal populations through the work of planning, signaling and organizing communities in case of tsunamis. These inundation maps will be worked on in coordination with the institutions responsible at the national level. On this occasion specialists from South and Central America exchanged technology and knowledge in order to jointly strengthen their capacities. The participation of specialists from Central America was achieved thanks to the support of the Office of the United States Foreign Disaster Assistance (USAID/ OFDA).

The course included the participation of representatives from the University of Concepcion, University of Chile, University of Antofagasta, Federico Santa Maria Technical University (all places of higher learning in Chile), the Regional Government of Magallanes and the Chilean Antarctica, the Hydrographic and Oceanographic Service of the Chilean Navy, National Hydraulic Institute and the Port

Works Directorate of the Ministry of Public Works of Chile, OSSO Corporation of Colombia, General Maritime Directorate of the Colombian Maritime Authority (DIMAR), the Oceanographic Institute of the Ecuadorian Navy (INOCAR), National Risk Management Secretariat of Ecuador (SNGR), Directorate of Hydrography and Navigation of Peru (DHN), Geophysical Institute of Peru (IGP), Nicaraguan Institute for Territorial Studies (INETER), National Service for Territorial Studies of El Salvador (SNET) and the University of Panama’s Institute of Geosciences.

**You may find course materials, relevant information and the list of participants at:**

[http://www.ioc-tsunami.org/index.php?option=com\\_oe&task=viewEventRecord&eventID=1002&lang=en](http://www.ioc-tsunami.org/index.php?option=com_oe&task=viewEventRecord&eventID=1002&lang=en)

**For further information, please contact:**  
**Giovana Santillan, g.santillan@unesco.org**



© SHOA  
 Mapa de Inundación en Coronel





Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura

Fortalecimiento del Sistema Regional de Alerta ante Tsunami en Chile, Colombia, Ecuador y Perú

# Newsletter

# 3

UNESCO DIPECHO VII Project

Strengthening the Regional Tsunami Early Warning System in Chile, Colombia, Ecuador and Peru

Issue N° 2 01/2012

UNESCO

## RELATED NEWS

### Chile and Peru to mobilize up to 500 thousand persons in huge joint tsunami simulation

The National Emergency Office of Chile (ONEMI) and the National Civil Defense Institute of Peru (INDECI) announced an unprecedented joint earthquake and tsunami simulation which intends to mobilize up to 500 thousand persons in both countries.

The exercise will be held in the year 2012 in the regions of Tacna (Peru) and Arica and Parinacota (Chile).

The huge simulation is part of the joint efforts that both countries are carrying out seeking to establish a cooperation agreement with respect to the topics of emergency and civil protection. This was announced

by the National Director of ONEMI, Vicente Núñez, following a working meeting with his Peruvian counterpart, the institutional head of INDECI, Alfredo Murgueytio. The Regional Director of ONEMI in Arica and Parinacota, Frank Schumauck, and the Regional Director of INDECI in Tacna, Carlos Núñez, also participated in the meeting which was held in Arica. Vicente Núñez highlighted that "this agreement that would be signed with INDECI shortly demonstrates the importance that both countries are giving to a topic as significant as the safety of the population".

Source: EMOL, 21 December 2011



© F. Ulloa, Callao, Lima, Perú

### In 2011, disasters caused the greatest economic losses in history

Last year, losses from disasters rose to 350,000 million dollars and 30,000 deaths, of which the majority came after the earthquake and tsunami recorded in Japan in March, 2011.

2011 closed as the most costly year in history in terms of economic losses caused by natural and other man-made disasters, and the value reaches 350,000 million dollars, according to estimates from reinsurer Swiss Re.

In those catastrophes at least 30,000 persons lost their lives between January and November, the majority in Japan.

The most expensive disaster, with an estimated total of 210,000 million dollars, was the earthquake in Japan last March and the tsunami which followed, which caused enormous damages to private property as well as public infrastructures and the nuclear industry. From this figure approximately 35,000 million dollars were insured.

In spite of the gigantic economic losses caused by different types of disasters, this year will not be so costly for the insurance sector as much of the properties were not insured.

The most expensive year for the insurance sector and reinsurers was 2005, when there were hurricanes Katrina, Wilma and Rita, which gave way to claims for reimbursements up to 100,000 million dollars.

The earthquakes were the worse type of disaster in terms of humans and economics losses in 2011, but "coverage for earthquake insurance remains very low, including in some industrialized countries with high earthquake risks like Japan", explained Chief Economist at Swiss Re, Kurt Karl.

Source: EFE Agency, 15 December 2011



© D. Melnick, Tirúa, Chile



Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura

Fortalecimiento del Sistema Regional de Alerta ante Tsunami en Chile, Colombia, Ecuador y Perú

# Newsletter

UNESCO DIPECHO VII Project

Strengthening the Regional Tsunami Early Warning System in Chile, Colombia, Ecuador and Peru

4

Issue N° 2 01/2012

UNESCO

## TO TAKE INTO CONSIDERATION

### Tsunamis in the Pacific:

The Pacific Ocean has the highest risk of seismic sea waves for being close to a very active tectonic belt and a chain of volcanoes, called the Pacific Ring of Fire. In that regard, the Pacific Ocean is structurally, topographically and seismically conditioned to serve as a fertile ground for venting telluric tensions, thus becoming a system of the most active tsunamis on our planet.

### Characteristics of a Tsunami:

In open sea far from the coast, it is a wave train small in height (in the neighborhood of centimeters to meters), that travel at great speed (almost 800 kilometers per hour). As it reaches the coast and faces less depth, the speed diminishes but the height increases, causing great destruction and numerous victims.

### Be attentive to your senses:

**They can be seen.** There is a significant retreat of the sea, leaving the sea floor and its ecosystem exposed.

**They can be heard.** On approaching the coast, it sounds like a moving train.

**They can be felt.** On most occasions a strong earth tremor precedes a tsunami. According to the epicentre's proximity or not, the tsunami could arrive in a matter of minutes.

**Remember: If you are on the coast and you feel a tremor that causes you to fall down, head to the highest zone that you can find.**

## INFORMATION ON UNESCO PROJECTS



**UNESCO DIPECHO VII Project “Strengthening the Regional Tsunami Early Warning Systems Preparedness in Colombia, Chile, Ecuador and Peru”**

**Seventh Action Plan for South America for the Disaster Preparedness Program (DIPECHO) of the European Commission  
Directorate-General for Humanitarian Aid (DG-ECHO)**

### Objective:

To strengthen the sub-regional system and national tsunami early warning systems through interconnected strategies at the sub-regional, national and local levels.

### Principal Outcomes:

Maximum coordination achieved with national counterparts as well as with DIPECHO partners in Colombia, Chile Ecuador and Peru.

Exchange of information and regional network established among the oceanographic institutes, seismologic institutes, Ministries of Education and national risk management offices of each country.

Regional Communication Protocol for Tsunami Early Warning on the Pacific Coast.

### Additional information:

[http://portal.unesco.org/geography/es/ev.php-URL\\_ID=15029&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/geography/es/ev.php-URL_ID=15029&URL_DO=DO_TOPIC&URL_SECTION=201.html)

