

ICG/ITSU-XX
Valparaiso, Oct. 2005

NATIONAL REPORT - COLOMBIA

I. BASIC INFORMATION

1. ICG/ITSU National Contact:

Name: Hansjürgen Meyer
Organization: Universidad del Valle
Observatorio Sismológico del Suroccidente - OSSO
Postal address: Campus Meléndez, Torre de Ingeniería, Piso 3
Cali - Colombia
E-Mail address: hjm@osso.univalle.edu.co , hjmeyer@osso.org.co ,
hjm_osso@yahoo.com, osso@osso.univalle.edu.co
Tel.-Nr. (Office) (57-2) 339-7222, (57-2)
Tel.-Nr. (Home) (57-2) 551-8092
Fax Nr. (57-2) 331-3418,
Mobile phone Nr. (311) 333-4866

2. Primary Warning Recipient:

same as above

3. Tsunami Advisors

Name: Dirección General para la Prevención y Atención de
Desastres - DPAD (Ministerio del Interior y de Justicia)
Postal Address: Calle 13 No. 32-69, Edificio Laboratorio Piso 4
Bogotá-Colombia
E-Mail address: diregen@dgp.gov.co, programas@dgp.gov.co
Tel.-Nr.: (57-1) 3750842 / 3751078 / 3750934
Web <http://www.dgp.gov.co>

Name: Comité Técnico Nacional de Alerta por Tsunami-CTNAT
(Comisión Colombiana del Océano - CCO (IOC National
Focal Point)
Postal address: Transv. 41 N°. 27-50, Edificio DIMAR, Piso 4
Bogotá-Colombia
E-Mail address: comites@cco.gov.co, secco@cco.gov.co
Tel. Nr.: (57-1) 2220449/36/21

Name: Centro de Control Contaminación del Pacífico-CCCP
(Dirección General Marítima – DIMAR)
Postal address: Vía el Morro, Capitanía de Puerto, Tumaco

E-Mail address: lotero@dimarnet.mil.co, jsoltau@dimarnet.mil.co
Tel.-Nr.: (57-2) 727 26 37
Web <http://www.cccp.org.co> , <http://www.dimar.mil.co>

Name: Defensa Civil de Colombia
Postal address: Calle 52 N°. 14-67
Bogotá-Colombia
E-Mail address: contactenos@defensacivil.gov.co, alarcon53@yahoo.com
Tel.-Nr.: (57-1) 6400090 - 6408081
Web <http://www.defensacivil.gov.co>

4. Emergency Management

Name: Dirección General para la Prevención y Atención de
Desastres (DPAD)
Postal address: Calle 13 No. 32-69, Edificio Laboratorio Piso 4
Bogotá-Colombia
E-mail address: diregen@dgp.gov.co , programas@dgp.gov.co
Tel.-Nr.: (57-1) 3750842 / 3751078 / 3750934, 3649090
Web <http://www.dgp.gov.co>

5. Local Tsunami Procedures

Local tsunami hazard exists for the Pacific coast, from the nearby subduction zone (destructive tsunamis in 1906 and 1979), with travel times as short as 20 min.

OSSO is responsible for tsunami detection and warning systems and procedures; the system for local tsunami detection and warning is still in development (VBB in repair).

Authorities and population in the most exposed town (Tumaco) have been trained to respond to a "personal alarm" (strong shaking) with evacuation. Based on wave modeling, local alarms for Tumaco would be held up for 2 hours, for most distant locations on the Colombian coast for 3 hours.

Telemetered (GOES) tide gages on the Colombian Pacific coast are presently operating inside the Tumaco and Buenaventura ports, on Malpelo island and in Juanchaco (entrance to bay of Buenaventura). Sampling is at one per hour. Data is available in near real-time on the web page of [IDEAM](http://www.ideam.gov.co).

OSSO operates presently on an 18h/7d basis; messages from PTWC and several regional and global seismological centers are automatically resent to mobile phones of several staff members; several staff members have remote access to the regional seismic network.

6. Distant Tsunami Procedures

The primary recipient for distant tsunami warnings is OSSO. Messages are being evaluated using diverse criteria and sources (historical data, wave propagation models, real-time seismological locations, real-time tide gage data (TOGA), etc.) as to their local significance. National bulletins are only issued if the mass media has become aware of PTWC messages, if the messages from PTWC have alert or alarm status, or if the evaluation leads to conclude that there could be local hazard. National bulletins are sent to >45 institutions and mass media; coastal communities are contacted via phone. Addresses of message recipients are monitored and checked twice a year.

II. SUMMARY

During the intersessional period advances in Colombia's national tsunami risk reduction program were made in various segments. Most actions focused on Tumaco, a town with a population of about 100.000, on a group of sea-level islands facing the most active segment of Colombia's tsunami source.

- Several routine meetings of the 'Comité Técnico Nacional de Tsunami (CCO), in Bogotá and Cali (OSSO); joint meetings of this committee and the 'Comité Técnico Nacional' (Dirección General de Prevención y Atención de Desastres) with local authorities in Tumaco.
- *"Evaluación de la vulnerabilidad física por terremoto y sus fenómenos asociados en poblaciones del Litoral de Nariño"* (OSSO with support from Dirección General de Prevención y Atención de Desastres). Results of this project are presently in a socialization process.
- Social vulnerability study *"Tumaco: Comunidad vulnerable"* (Universidad del Cauca, with support from DPAD)
- *Geotechnical zonation for liquefaction potential in the urban area of Tumaco* (Instituto Nacional de Geología y Minería-INGEOMINAS)
- Projects *"Evaluación del impacto de un tsunami en el Litoral Pacífico Colombiano"* and *"Regeneración de la isla de barrera El Guano en Tumaco"* (DIMAR/CCCP).
- Personnel from Colombia participated in ITSU/ITIC training courses (Hawaii), 2004.
- Preparation, official adoption and socialization of the "Plan Local de Emergencia y Contingencia para Sismo, Licuación y Tsunami Municipio de San Andrés de Tumaco, Nariño"
- Production of educational material (maps, leaflets, radio and local TV spots) on earthquakes and associated hazards for Tumaco (Fundación Promotora para la Zona Económica Especial de Exportación de San Andrés de Tumaco, with support from DPAD).
- Several meetings led by Colombia's Vicepresident (President, Comisión Colombiana del Oceano - CCO) to coordinate and foster the national tsunami risk reduction program, 2004-05.
- Installation of signs (as recommended by ICG/ITSU) for exposed areas, evacuation routes and areas in Tumaco (03/2005).
- First earthquake and tsunami drill in Tumaco (29/04/2005), with direct participation of ~12,000 persons, coordinated by Defensa Civil and the Local Disaster Prevention Committee-CLOPAD, observed and evaluated by Colombia's Vicepresident and several technical institutions. Warning and dewatering messages were sent from OSSO via mobile phones and fax.
- Distribution of school book *"Nosotros, Tumaco y el Ambiente"* to high schools in Tumaco. Socialization process in progress, with teachers. This book is the first to treat local and regional aspects (environmental, historic, etc.) and embeds hazard information in a context of environmental interactions and cost/benefit visions (OSSO, with support from DPAD).
- Invited participation (Dr. Jorge Mejia, OSSO), Regional Workshop for the Central American TWS (INETER, Managua, April 2005); presentation on Colombia's program.
- *'Encuentro Internacional para el Establecimiento de un Sistema de Alerta Temprana por Tsunami para el Caribe y Regiones Adyacentes'* (IOCARIBE, 1-3 June, México

City). Colombian tsunami committee members presented an evaluation of the April 2005 Tumaco tsunami drill.

III. NARRATIVE

The first public tsunami drill was performed successfully in Tumaco (April 2005), with ~12,000 people from institutions, schools, response organisms, commerce and factories, hotels, etc.

Tumaco has also been provided with a 'Centro de Atención Inmediata', where provisions for immediate response to earthquake and tsunami are being kept.

Yearly national expositions of the 'Sistema Nacional de Prevención y Atención de Desastres' ([PREVER 2005](#)) inform general and institutional visitors also on national tsunami risk reduction activities and projects.

The coastal segment most devastated by historical tsunami (Narino province, SW-Colombia) was recently evaluated in detail as to exposure and vulnerability to earthquake, tsunami and liquefaction (OSSO, with support from DPAD). The results, which include posters with main findings and recommendations, are presently being socialized with each one of the municipalites.

Activities are underway to implement risk reduction projects similar to those in Tumaco also in other coastal settlements.

Colombia's Vicepresident, Dr. F. Santos (Chairman of the Comision Colombiana del Oceano) has met several times (2004-05) with the Colombian Tsunami Committee, with the aim to strenghten the national tsunami warning system and related risk reduction programs. Under his guidance the legal frames to provide OSSO and its TWS activities with funds are being developed.

Information on programs and activities pertaining to Colombia's tsunami risk reduction program can be found on web pages of several institutions:

Dirección General de Prevención y Atención de Desastres-[DPAD](#) : risk reduction and disaster management in Colombia, tsunami risk reduction, edecational material, leaflets, tsunami signaling in Tumaco.

Comité Técnico Nacional de Tsunami – [CTAT](#) (Comisión Colombiana del Océano – CCO): programs coordinated by the Comité.

Dirección General Maritima – [DIMAR](#): general information on tsunami, projects.

Centro de Control para la Contaminación del Pacífico – [CCCCP](#) (DIMAR): research projects, inundation models.

Instituto de Hidrología, Meteorología y Estudios Ambientales – [IDEAM](#): sea-level net

Instituto Nacional de Geología y Minería – [INGEOMINAS](#): information on seismicity.

Defensa Civil Colombiana – [DCC](#): information on emergency and contingency plans (Tumaco).

Observatorio Sismológico del Suroccidente – [OSSO](#) (Universidad del Valle): seismicity, TWS bulletins, wave modeling, papers on tsunami en Colombia, educational material, etc.