Executive Summary Report

Workshop on the use of Open-Source Software and Satellite Data in the Prevention of, and Response to, Disasters in Mesoamerica

19 – 23 May 2014, Tonantzintla, Puebla, México

Objective and Goal

The Workshop was a follow-up to the main recommendations made by participants in a *Workshop on the Use of Space Science and Technology for the Prevention of and Response to Disasters in Mesoamerica*, held in Tuxtla Gutierrez, Chiapas, Mexico in November 2013 and by participants in the *Central American Meeting of Experts on the Use of Satellite Information for the Integral Management of Risks and Early Warning organized by the* UN-SPIDER Programme, the Center for Coordination for the Reduction of Natural Disasters in Central America (CEPREDENAC) and the SWF on 31 March and 1 April 2014 in San Salvador, El Salvador.

The aim of the Workshop was to strengthen both individual and institutional capacities for disaster prevention and relief in countries of Mesoamerica in the use of open-source software in combination with Earth Observation images.

Profile of Participants

Participants in the Workshop had one of two profiles a) professionals responsible for disaster prevention or response to disasters or b) technical personnel with some capacity in the use EO data to support the planning for disaster prevention or civil protection actions. Participants came from disaster prevention and civil protection authorities from Mesoamerican countries. Other participants were remote sensing and geographical information system experts from regional and national space science and technology institutions

Co-organizers

The Workshop was organized by the organizers of the Workshop held in Chiapas: the Regional Centre for Space Science Education for Latin America and the Caribbean (CRECTEALC), the Mesoamerican Centre for Theoretical Physics (MCTP), the Secure World Foundation (SWF), the National Oceanographic and Atmospheric Administration as co-chair of the CEOS Working Group on Capacity Building and Data Democracy (WGCapD) and the National Institute for Astrophysics, Optics and Electronics (INAOE) again in coordination with Secretariat of GEO. The Mexican Space Agency (AEM) joined as a co-organizer.

Financial Support

Financial support to defray the cost of air travel of some participants, hotel accommodations, living expenses of all participants, simultaneous interpretation English-Spanish and technical meeting facilities was provided by MCTP, SWF, CRECTEALC, INAOE and AEM.

Overview of the program

The main goal was to continue promoting the use of Earth Observation (EO) images for disaster reduction, in particular the on-going work and resources made available by the Global Earth Observation System of Systems (GEOSS) and the capacity building and relevant resource availability for Latin America and the Caribbean being developed under the EOPOWER project of the European Commission.

The program for the Workshop focused on:

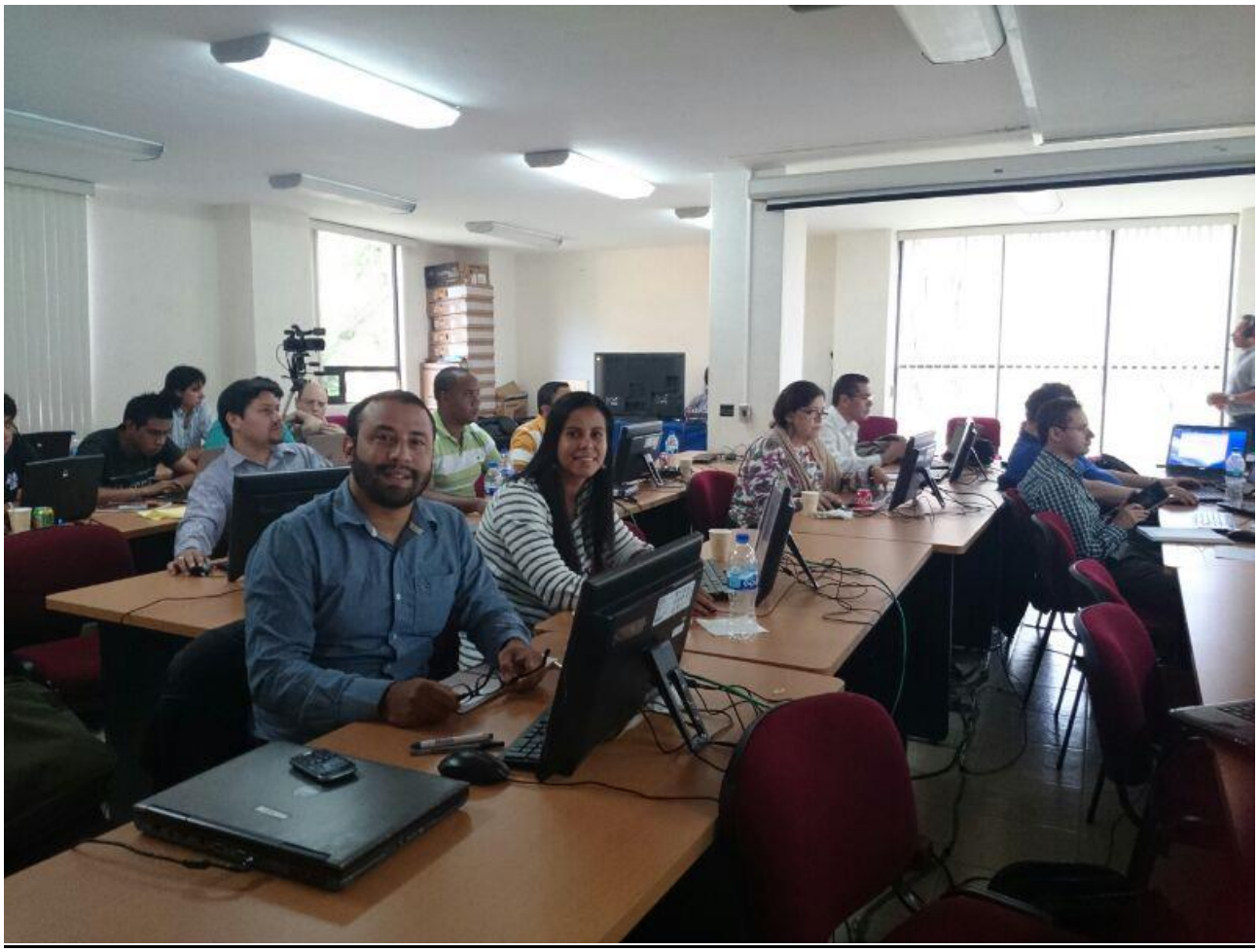
- Training on using satellite and cartographic data in Quantum-GIS (Q-GIS), an open-source, no-cost, geographical information system.
- Training on the use of TerraMA^2, developed by the National Institute for Space Research (INPE) of Brazil for estimating risk in a wide variety of disaster situations, also an open-source software and available without cost.

Presentations addressed:

- Essential information needed for preventing or responding to disasters.
- Case studies that illustrate the use of EO images, existing cartography and in-situ data for disaster reduction.
- Data distribution policies and potential constraints on the use of data
- Capacity building in the use of EO in disaster risk management being made available under the European Commission's EOPOWER project.

Main Topics

- El uso de los sistemas de información geográfica en la prevención y respuesta a desastres - El caso de inundaciones;
- Overview of GEO and the implementation of GEOSS - opportunities for Latin American and Caribbean involvement;
- GEONETCast Americas - a near real time satellite-based data dissemination system;
- The International Charter;
- FEWS NET - Aplicaciones de percepción remota en la alerta temprana en caso de sequías;
- The WMO-CGMS Virtual Laboratory;
- The EOPOWER Project – Participation and Contributions of Latin America (WP – 12);
- UNSPIDER - Institutionalizing the use of space-based information in the disaster management cycle; Data and information access policies;
- Systems Engineering Tools for Data Acquisition Planning and Data Access;
- Gestión del riesgo utilizando SIG y sensores remotos – aplicaciones en Haití y Costa Rica;
- Modelo Dinámico de Protección Civil para Tabasco;
- Conformación de Grupo Interinstitucional de Información Geo-Espacial Para la Toma de Decisiones en la Gestión de Riesgo;
- MCTP Programs;
- SERVIR Disaster Activities in the Region;
- Quantum-GIS and the InaSAFE disaster risk assessment tool – Introduction and overview;
- Hands-on Quantum-GIS;
- TerraMA^2 - an operational open-source system to monitor warnings of environmental risks.



Participants during one of the hands-on exercises

Speakers:

- D. Juarros (CONRED/Guatemala),
- A. Gutiérrez, (NOAA),
- M. Medina (NOAA),
- L. Aguilar, FEWS NET;
- Lu Veeck (WMO);
- S. Camacho (CRECTEALC/Mexico),
- J.-C. Villagrán (UN-SPIDER),
- R. Williamson (SWF),
- Brian Killough (NASA),
- J. Saborio (CATIE/Costa Rica);
- A. Gómez (AEM/Mexico),
- X. Rodríguez (Defensa Civil y Comisión Nacional de Emergencia/Rep. Dominicana),
- E. Santos (MCTP/Mexico)
- J. Perez (CATHALAC/Panamá),
- S. Madry (UNC at Chapel Hill/USA),
- L. Massaru (INPE/Brazil)

Main conclusions

The participants held discussions on the usefulness of software systems, commercial and open-source, that could be used with Earth Observation data in models like TerraMA^2, to extract information that would be useful to decision-makers in the prevention and response to disasters, particularly in flooding and drought. The participants concluded that although some of their institutions had and used commercial imagery and software, long-term continuity could be ensured if their institutions developed proficiency in acquiring free or low-cost imagery and in the use of open-source software such as QGIS and TerraMA^2.

The participants concluded that Earth Observation can be valuable support to decision-makers responsible for disaster prevention, mitigation and rehabilitation activities but that additional awareness and capacity building for the disaster management and the scientific and technical communities is needed.

The participants proposed to establish a working group among themselves to promote and disseminate the use of geo-information oriented to Mesoamerican development. The working group would begin addressing Mesoamerica Open-Source Activities (MOSDA) that would include data and software.