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Regional Expert Meeting

Enhancing the use of Space based information in Multi-Hazard Early Warning Systems

Co-organized by

The United Nations Office for Outer Space Affairs
(UNOOSA) through its United Nations Platform for Space-
based Information for Disaster Management and
Emergency Response (UN-SPIDER) of the

and

The Mexican Space Agency (AEM)

With the support of

The Regional Centre for Space Science and Technology for Latin
America and the Caribbean (CRECTEALC)

The National Disaster Prevention Centre of Mexico (CENAPRED)

Mexico City, Mexico 11 to 13 July 2017

1. INTRODUCTION:

As reported by the Centre for Research on the Epidemiology of Disasters (CRED) of the Université Catholique de Louvain in Brussels, Belgium; the actual trends on disasters worldwide indicate that governments and communities need to continue their efforts in many countries of the world to effectively reduce disaster risks. One of the ways in which governments and communities have approached this task is through the establishment of early warning systems for a variety of natural hazards. However, despite the great progress made so far in early warning systems for hydrometeorologic hazards, there are other hazards whose early warning systems are still on a development phase and could be improved.

The Sendai Framework for Disaster Risk Reduction 2015-2030 introduced the notion of multi-hazard early warning systems given their high potential to reduce losses and damages. The incorporation of multi-hazard early warning systems as part of efforts to enhance disaster preparedness stems from the fact that in recent years there has been a steady growth of disaster risk, particularly through an increase in the exposure of people and vulnerable assets.

While efforts have been conducted in many developing countries to implement early warning systems as a way to contribute to disaster risk reduction efforts; other countries do not yet benefit from the minimum benefit that such systems can provide.

As a way to advance the implementation of the Sendai framework on this topic of multi-hazard early warning systems; WMO, UNOOSA, UNESCO-IOC, FAO, GFDRR, GIZ and other partners launched the **International Network on Multi-Hazard Early Warning Systems** (IN-MHEWS) during the Third World Conference on Disaster Risk Reduction. The network aims to facilitate the sharing of expertise and good practice for multi-hazard early warning systems as a way to contribute to enhance the resilience of communities exposed to natural hazards. Building on their respective programmes, activities and institutional mechanisms for cooperation, the IN-MHEWS partners will work together to promote a holistic and integrated multi-hazard, multi-stakeholder and multi-level approach to early warning.

The role of UNOOSA in this network is the promotion of the use of satellite applications, including Earth observation, in this area of multi-hazard early warning systems. Earth observation and geospatial data provide relevant and timely information in the form of maps as a way to display areas which are exposed to natural hazards. These maps facilitate the visualization of risks and contribute to planning responses in a timely manner as a way to prevent or reduce disasters.

Recognizing the usefulness of space-based technologies and geospatial information to contribute to sustainable development worldwide; the Committee on the Peaceful Uses of Outer Space (COPUOS) of the United Nations and UNOOSA are leading the **UNISPACE+50 process** to shape the use of these space-based technologies in the framework of the global "Space 2030" agenda. This UNISPACE+50 process has been shaped with several aims, including the identification of synergies regarding the use of space technologies to contribute to the implementation of the Sendai framework for

disaster risk reduction, the Paris climate change agreement and the Sustainable Development Goals.

This Regional Expert Meeting entitled *Enhancing the use of Space based information in Multi-Hazard Early Warning Systems*, to be conducted from 11 to 13 July 2017 in Mexico City, Mexico, will contribute to the efforts conducted by UN-SPIDER in the area of early warning systems, in particular to the project entitled *Strengthening Early Warning Systems for Droughts* (SEWS-D); which is conducted by UN-SPIDER and nine international, regional and national partners in Central America and the Dominican Republic. The selection of Mexico (North America) stems from the fact that previous regional expert meetings were already held in the Caribbean (2016), South America (2015), and Central America (2014). This time, the Regional Expert Meeting is enriching its scope, addressing multi-hazard early warning systems as a way to contribute to the implementation of the Sendai framework and to the efforts conducted by the IN-MHEWS.

Furthermore, the Regional Expert Meeting will also contribute to the UNISPACE+50 process that the United Nations Office for Outer Space Affairs (UNOOSA) and the Committee on the Peaceful Uses of Outer Space launched in the year 2015 to articulate a long-term vision for Space for the coming decades. Specifically, participants taking part in this Regional Expert Meeting will elaborate policy-relevant recommendations on the use of space technologies to contribute to the implementation of the Sendai framework, taking note of the adverse effects of climate change on hydrometeorological hazards.

2. BACKGROUND AND OBJECTIVES

While the United Nations has been promoting the conduction of disaster risk reduction efforts for more than two decades around the world; disasters continue to impact urban and rural communities in many regions of the world, inhibiting sustainable development.

The Sendai framework calls for the use of space-based technologies and geospatial information as a way to improve the understanding of disaster risk and to address multi-hazard early warning systems. As a way to promote an improved understanding of disaster risk, the framework promotes real time access to reliable data, the use of space and in situ information, including geographic information systems (GIS), and the use information and communications technology innovations to enhance measurement tools and the collection, analysis and dissemination of data. The framework also calls on the international community to promote and enhance, through international cooperation, including technology transfer, access to and the sharing and use of non-sensitive data and information, as appropriate, communications and geospatial and space-based technologies and related services; and to maintain and strengthen in situ and remotely-sensed Earth and climate observations as appropriate and in accordance with national laws.

The Paris Climate Change agreement calls for efforts in the area of climate risk early warning efforts. The Sustainable Development Goals also make reference to improved institutional capacity in early warning strategies as part of its Goal 13 “Take urgent action to combat climate change and its impacts” and also in a more implicit way in the Goal 11 “Make cities inclusive, safe, resilient and sustainable”.

Recognizing the usefulness of space-based technologies and geospatial information to contribute to sustainable development worldwide; the Committee on the Peaceful Uses of Outer Space (COPUOS) of the United Nations and UNOOSA are leading the UNISPACE+50 process to shape the use of these space-based technologies in the framework of the global “Space 2030” agenda. This UNISPACE+50 process has been

shaped with several aims, including the identification of synergies regarding the use of space technologies to contribute to the implementation of the Sendai framework for disaster risk reduction, the Paris climate change agreement and the Sustainable Development Goals.

Taking into consideration these frameworks and agreements, as well as the potential benefits of the use of space technologies in a variety of areas, the Committee on the Peace Uses of Outer Space has a thematic priority within this UNISPACE+50 process that is geared to contribute to enhance the resilience and to support Member States in meeting objectives of the global development agenda:

- International cooperation towards low-emission and resilient societies:

This priority aims to define synergies between climate change mitigation efforts, disaster risk reduction, global development and reducing emissions by replacing carbon energy with renewable energy. In addition, this priority will address ways to improve the combined use of existing and future Earth observation, global navigation satellite systems and telecommunications constellations for disaster risk reduction and climate change monitoring and mitigation. Furthermore, it will address ways to improve integrated space applications approaches and the interoperability of space-based systems and ground in-situ systems.

UNISPACE+50

The year 2018 will mark the 50th anniversary of the first United Nations International Conference on the Exploration and Peaceful Uses of Outer Space - UNISPACE+50. The Committee on the Peaceful Uses of Outer Space (COPUOS) at its fifty-eighth session in June 2015 endorsed the plan of work for UNISPACE+50. UNISPACE+50 will review the contributions that the three UNISPACE Regional Expert Meetings (UNISPACE I, held in 1968, UNISPACE II, held in 1982, and UNISPACE III, held in 1999) have made to global space governance. In line with the 2030 Agenda for Development and sustainable development goals, UNISPACE+50 aims to chart the future role of COPUOS, its subsidiary bodies and the United Nations Office of Outer Space Affairs, at a time of an evolving and more complex space agenda when more participants, both governmental and non-governmental, are increasingly involved in ventures to explore space and carry out space activities. The activities of the United Nations Programme on Space Applications are an integral part of the UNISPACE+50 thematic cycle and are aimed at contributing to outputs under the four pillars space economy, space society, space accessibility and space diplomacy. For additional information on UNISPACE+50 see <http://www.unoosa.org/oosa/en/ourwork/hlf/hlf.html>.

This Regional Expert Meeting in Mexico in July will be used to address the usefulness of space-based information in multi-hazard early warning systems, thereby contributing to the implementation of the Sendai framework, Paris climate change agreement and the Sustainable Development Goals.

Moreover, this Regional Expert Meeting will be conducted as a follow up to two important events relating Disaster Risk Reduction: the International Conference on Multi-Hazard Early Warning Systems and the 2017 Global Platform for Disaster Risk Reduction. The overall aim of the global platform conducted by UNISDR is to function as global forum for strategic advice, coordination, partnership development and the review of progress in the implementation of international instruments on disaster risk reduction. Furthermore, the main objective of the International Conference conducted by UNISDR, WMO, UNESCO, UNOOSA, the Government of Mexico and other partners, is to support multi-hazard warning efforts around the world. The UN-SPIDER Expert Meeting will allow the programme to focus more explicitly on the use of space-based technologies in multi-

hazard early warning systems and to contribute to address multi-hazard early warning efforts.

The specific objectives of the UN-SPIDER Regional Expert Meeting will be:

- To take stock of efforts conducted by institutions in Latin America and the Caribbean on the use of space-based information in single- and multi-hazard early warning systems;
- To provide continuity to the efforts conducted by UN-SPIDER and its partners in the SEWS-D project;
- To explore ways to enhance the use of this type of information in single- and multi-hazard early warning systems; particularly through the development and promotion of UN-SPIDER Recommended Practices in this specific area and through increased synergies among participants;
- To bridge the space and the early warning communities, with a particular focus on Latin America and the Caribbean;
- Explore the use of enhanced networks of satellite systems;
- To contribute to the implementation of the Sendai framework and the Paris climate change agreement;
- To contribute to the UNISPACE+50 efforts, in particular Thematic Priority 6 in the topics of resiliency and climate change.

Additionally, the proposed expert meeting will contribute to the elaboration of policy-relevant recommendations to be submitted to UNOOSA and COPUOS related to *Thematic Priority 6 of the UNISPACE+50 process: International cooperation towards low-emission and resilient societies*, particularly in the area of resilience to disasters. The activity will be used to discuss ways:

- To improve the combined use of space space-based systems and ground/in situ systems dedicated to early warning purposes, with a particular focus on risk assessment and monitoring of hazards;
- To contribute to the efforts conducted by two global partnerships where UNOOSA / UN-SPIDER is a member: the Global Partnership on Space Technology Applications for Risk Reduction (GP-STAR) and the International Network on Multi-Hazard Early Warning Systems (IN-MHEWS);
- To identify ways to facilitate the visualization of the relationships between a changing climate, the vulnerability to hazards and the sustainable development expectations of nations of Latin America and the Caribbean;

The activity will also be used to contribute to the efforts conducted by UNOOSA with respect to *TP-7: capacity building for the 21st century*, particularly identifying innovative approaches to capacity building used by regional and international institutions taking part in the event.

3. LOCATION, DATE AND LANGUAGE OF THE REGIONAL EXPERT MEETING

The Regional Expert Meeting will be held from 11 to 13 July 2017 in Mexico City, Mexico. Invited participants will receive information with details on hotels and other local arrangements.

The Regional Expert Meeting will be conducted in Spanish language.

4. AGENDA OF THE REGIONAL EXPERT MEETING

The following activities are foreseen:

- A high level panel with Directors of Institutions involved in the implementation of national drought policies, and institutions that make use of geospatial information;
- Plenary and technical presentations by experts involved in space-based applications, and those from the disaster risk reduction and early warning communities;
- Plenary presentations by representatives of countries involved in multi-hazard early warning efforts
- Plenary sessions and breakout groups addressing the following topics:
 - Examples of the use of integrated use of space-based and ground-based information in single- and multi-hazard early warning systems;
 - Examples on the combined and complementary use of the different satellite technologies (Earth observation, satellite telecommunications, global navigation satellite systems);
 - Development and implementation of novel step-by-step procedures to use space technology applications in single- and multi-hazard early warning systems;
 - Development and implementation of novel step-by-step procedures to facilitate the visualization of links between a changing climate, the vulnerability to hazards and sustainable development expectations.

5. PARTICIPANTS

The Regional Expert Meeting will bring together participants from national, regional, and international organizations from:

- Government agencies including national meteorological institutes, civil protection agencies, ministries of agriculture, environment and natural resources who are involved in disaster risk reduction and early warning systems;
- Regional and international organizations;
- Academic and research institutions;
- Non-governmental organizations, and
- The private sector and industries.

6. LIFE AND HEALTH INSURANCE

Life/major health insurance for each of the selected participants is necessary and is the responsibility of the candidate or his/her institution or government. The co-sponsors will not assume any responsibility for life and major health insurance, nor for expenses related to medical treatment or accidental events.

7. LANGUAGE OF THE REGIONAL EXPERT MEETING

The Regional Expert Meeting will be conducted in Spanish language.

8. CONTACT INFORMATION

For information regarding the programme of the Regional Expert Meeting, please contact:

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