

**Open informal session of the United Nations Inter-Agency Meeting on Outer Space Activities**  
**“Space and disaster risk reduction: Planning for resilient human settlements”**  
**Perspectives towards the Fourth Session of the Global Platform for Disaster Risk Reduction**  
**Hosted by the United Nations Office on Disaster Risk Reduction (UNISDR)**  
**Geneva, 12 March 2013**  
**Rapporteur Report, Panels A and B**

## **I. Background**

The open informal session on space and disaster risk reduction: Planning for resilient human settlements”: Perspectives towards the Fourth Session of the Global Platform for Disaster Risk Reduction was held on 12 March 2013 in conjunction with the 33<sup>rd</sup> meeting of the United Nations Inter-Agency Meeting on Outer Space Activities, a United Nations system wide coordination mechanism on space-related activities. The session was organized by the Office for Outer Space Affairs of the Secretariat (UNOOSA) in cooperation with UNISDR.

The event was an interactive forum for dialogue among Governments, national authorities, United Nations system entities, private sector and civil society on the contribution of space-based-technology applications and geo-spatial data derived from space-based platforms and terrestrial sources to meet the challenges of disasters caused by natural hazards and technological disasters to socio-economic development. Representatives of the following countries attended the open informal session: Barbados, China, Colombia, Ecuador, Germany, Greece, Guatemala, Indonesia, Italy, Mexico, Philippines, Russian Federation, South Africa, Sweden, Switzerland, Thailand, and Turkey.

In addition to UNISDR, UNOOSA and its United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) programme, panellists in the open informal session included representatives from the World Bank/ Global Facility for Disaster Reduction and Recovery (GFDRR), the United Nations Human Settlements Programme (UN-HABITAT), the United Nations Institute for Training and Research (UNITAR) Operational Satellite Applications Programme (UNOSAT), ITA Committee on Underground Space of the International Tunnelling and Underground Space Association (ITACUS), the European Commission/COPERNICUS service, and the Université Paris-Est Marne-la-Vallée,

The aim of the open informal session was to understand how the integrated and coordinated use of space-based and terrestrial technologies and their applications can play a crucial role in supporting disaster risk management and reduction by (i) providing accurate and timely information and communication support through improved risk assessment, early warning and monitoring of disasters; (ii) improving access to geospatial data and information; and (iii) building capacities to use scientific knowledge in areas such as climate monitoring, land use planning, water management, disaster risk reduction, health and food security, to allow for more accurate environmental and social impact assessments and lead to more informed decision-making at all levels.

In 2005, the ten-year Hyogo Framework for Action was laid down by Member States containing strategic goals and actions for building the resilience of nations and communities to disaster. Among other things, the Hyogo Framework calls for disaster risk reduction to be integrated into sustainable development plans of both rich and poor nations in order to stem economic losses due to disaster. This is done, inter alia, by strengthening risk assessment and investing in disaster prevention and early warning. The Hyogo Framework also calls on nations and communities to improve the resilience of vulnerable populations as an additional way of containing the social and economic impact of disasters on society as a whole.

The open informal session comprised two panel discussions aimed at stimulating an interactive dialogue on the role of space-based tools and spatial data infrastructure in enhancing resilience of human settlements, namely for urban planning, land-use planning, and rural development – areas of relevance to the Hyogo Framework. The open informal session was organized to assist countries as they engage in substantive preparation of the upcoming Global Platform for Disaster Risk Reduction (Geneva, 19-23 May 2013), where participants would consult on the post-2015 disaster risk reduction framework to continue efforts that began under the Hyogo Framework. It also examined the latest thinking on ways to meet society's information and communication needs.

## **II. Opening of the session**

The open informal session was opened with welcome addresses by Margareta Wahlström, Special Representative to the Secretary General for Disaster Risk Reduction (SRSG) and Niklas Hedman, Chief of Committee, Policy and Legal Affairs section at the United Nations Office for Outer Space Affairs.

In her welcoming remarks, Margareta Wahlström pointed out that in less than 70 days, the fourth session of the Global Platform for Disaster Risk Reduction would gather about 3000 practitioners and policy makers in Geneva, with the main goal of examining the progress in the implementation of the Hyogo Framework for Action, including in the integration of disaster risk reduction into sustainable development policies and planning. She expressed hope that the open informal session would be mutually beneficial both to the disaster risk reduction community and the space community, not only because disaster risk reduction practitioners were among the beneficiaries of space science and technology, but also because of the strong interest of the disaster risk reduction community in how multi-stakeholder processes to advance space science and technology for development uses can be used to make progress on other topics and by a wider range of stakeholders, including in the area of increasing resilience of human settlements.

Niklas Hedman pointed to activities of the intergovernmental Committee on the Peaceful Uses of Outer Space (COPUOS), currently with 74 Member States and 30 observer organizations, in the field of long-term sustainability of outer space activities, including perspectives on the use of space assets in sustainable development on Earth and protection of the space environment, as well as contributions of COPUOS to meeting the outcome of the United Nations Conference on Sustainable Development (Rio+20) and towards the post-2015 development agenda. He further mentioned that the importance of space-technology-based data and reliable geospatial information for sustainable development policymaking was recognized both by the Rio+20 Conference, in its outcome document, "The future we want", and within the United Nations system report on the post-2015 development agenda entitled "Realizing the Future We Want for All".

### III. Panel discussion

#### Panel A: Towards resilient cities: A wider use of geospatial data in urban planning

Discussion panel A was moderated by Helena Molin-Valdés, Coordinator of “Making Cities Resilient Campaign”, UNISDR. The Panel covered, inter alia, aspects of city planning and underground infrastructures; lessons learned from the Making Cities Resilient campaign; integrated urban planning processes for disaster risk reduction and adaptation; and experiences on resilience, urban planning and technical considerations. The moderator encouraged the panellists to look at ways of linking space-based technology, and the information generated by those technologies, to the wider issue of disaster risk reduction and long-term sustainable development.

Han Admiraal, Chairman, and Antonia Cornaro, Secretary-General, ITA Committee on Underground Space of the International Tunnelling and Underground Space Association (ITA-AITES), in their presentation entitled “*From outer space to underground space – helping cities become more resilient*”, explored the idea of how space technology and its applications could be used to detect changes in ‘underground space’ and provide scientists with critical clues on emergence of a potential disaster. Bringing examples from Bangkok, Kuala Lumpur, Madrid and Rotterdam, they highlighted the potential of the underground space in strengthening the resilience of cities.

Youssef Diab, Université Marne-la-Vallee, Paris Est, France, in his presentation on “*Space-based, terrestrial technologies and resilience towards a sustainable city: An academic point of view*”, presented the complex evolution of cities management and urban services in function of resilience, risk management and sustainability. He outlined the concept of urban engineering as a possible solution for strengthening researchers in the field of city management and planning, and reviewed case studies on the use of space-based and terrestrial technologies for sustainable cities. He concluded by stating that resilience was by definition a multi-disciplinary theme and that space technologies had a prominent place in addressing the complexity of its aspects.

Esteban Leon, Shelter Rehabilitation Unit, Risk Reduction and Rehabilitation Branch, United Nations Human Settlements Programme (UN-Habitat) focused his remarks on integrated urban planning processes for disaster risk reduction and adaptation. He mentioned that the application of new technologies, as well as upgrading of tunnelling and underground space systems required significant financial outlays and observed that not many cities had capacities to undertake those investments to reduce their vulnerabilities. He also discussed UN-Habitat’s new four-year City Resilience Profiling Programme, which aims to provide national and local governments with tools for measuring and increasing resilience to multi-hazard impacts.

Helena Molin-Valdés, in her remarks introduced the Making Cities Resilient campaign, launched by UNISDR in May 2010 to address issues of local governance and urban risk, and outlined that in its second phase in 2012-2015, the campaign would continue to advocate widespread commitment by local governments to build resilience to disasters and increase support by national governments to cities for the purpose of strengthening local capacities in dealing with disasters. She emphasized the need to make technology and derived information more accessible to local governments, to increase awareness on its benefits for disaster risks reduction and resilience building support, and to promote the applications of such technology by urban planners, engineers, and development practitioners to innovate and improve resilience of the urban environment.

## **Panel B: Mainstreaming space technology in land use planning and rural development strategies for effective disaster management**

Discussion panel B was moderated by Luc St-Pierre, Coordinator of UN-SPIDER Programme, UNOOSA. He mentioned that the panel provided an opportunity to answer to some of the issues raised by the SRSG in her opening remarks in referring to the need to consider the full cycle of disaster management in a coordinated approach and to the ever present need for capacity building and institutional strengthening in the use of space-based geospatial data and information. He also encouraged the panellists to present clear examples of actions aiming at creating long-term impacts as sought under the post-2015 development agenda.

Keiko Saito, Global Facility for Disaster Reduction and Recovery, World Bank/GFDRR, in her presentation on “*Poverty Reduction through Effective Disaster Risk Management and Climate Change Adaptation*”, related to the work of GFDRR, which, through various forms of partnerships, looks to promote the use of space based technologies in all phases of the disaster cycle; to connect the ex-ante with ex-post assessments focusing on flood impact assessment tools; to mainstream remote sensing into the operational environment in Member States; to promote data sharing through Open Disaster Risk Information; and to leverage existing activities both at national and international level.

Einar Bjorgo, UNITAR/UNOSAT, delivered a presentation on “*Mainstreaming space technologies for effective disaster management*”, in which he presented examples of products and services of UNITAR/UNOSAT covering the whole disaster management cycle in the sectors of humanitarian aid and relief coordination, human security, and territorial planning and monitoring. He illustrated successes in its activities, featuring provision of satellite imagery for India/WHO polio eradication campaign and sharing of flood extent vectors in the cause of Thailand floods in 2011. He also briefed on cooperation initiatives in Africa and the Asian-Pacific region.

Juan Carlos Villagran de Leon, Head of UN-SPIDER Bonn Office, UNOOSA, in his presentation on “*The UN-SPIDER Programme*”, observed that the use of space technology, geographic information systems and geospatial data could assist countries in reporting on progress achieved under the Hyogo Framework for Action, as well as in preparing for new international disaster risk reduction and development frameworks that were currently being designed. He informed that UN-SPIDER, through advisory services, planned and delivered in close collaboration with national authorities, aimed at increasing national and regional capabilities in disaster risk reduction and emergency response, and showcased some recent assessment and training activities.

Frédéric Bastide, Economic Commission/Copernicus, in his presentation on “*Copernicus Overview and Emergency Management Service*”, introduced the Copernicus programme, aiming at providing relevant information to policy-makers and other users, particularly in relation to environment and security, and provided information on Copernicus’s service, space and in-situ components. He stated that, in line with its vision of being flexible and adapted to emergency response actors, the Copernicus Emergency Management Service was available for the benefit of humanitarian aid and disaster management interventions worldwide, in particular to United Nations agencies, and highlighted its ‘public good’ data policy, which enabled open access and free licensing to general public users.

#### **IV. Conclusion**

The discussion at the open informal session reconfirmed the importance of space-based tools and spatial data infrastructure for policy planners and decision makers in increasing the resilience of human settlements. Space-derived and in-situ geographic information and geospatial data was also shown to be of benefit during times of emergency response and reconstruction, particularly in large urban areas with a high population density and especially after the occurrence of major events such as earthquakes or floods. Using geographic data and information collected before the occurrence of major disasters in combination with post-disaster data could yield important ideas for improved urban planning, especially in disaster-prone areas and highly-populated regions.

Availability of structured and easily-accessible, shared geographic information is also indispensable for disaster management activities, such as identifying access corridors or establishing the optimal location for essential public institutions such as hospitals or emergency shelters. Such geographic data and related resources and capacities are part of what is known as “spatial data infrastructure” (SDI).

SDIs are being developed at the local (city), national, regional and global scales, but a lot more investment of effort is needed to optimize their use in the future for disaster risk reduction and disaster management, and to make them sustainable, well-resourced, and capable of easily offering accurate and updated information at any point and as needed. Furthermore, multi-stakeholder coordination is essential to ensure a systematic, timely and adapted integration of the space-based technology applications of remote sensing, meteorological satellites, satellite telecommunication and global navigation satellite systems to multi-source geospatial datasets. Key objectives include establishing sustainable spatial data infrastructure, and enhancing autonomous national capabilities in the area of space-derived geospatial data, including the development of associated infrastructure and institutional arrangements.

The focus on the use of space technology and its applications to enhance resilience to disasters in the context of land use and urban planning as the theme for this open informal session reflected a mounting recognition for the important role of space-derived data and information in making informed decisions for disaster risk reduction and sustainable development. The theme of the open informal session also accorded with the outcome of the Rio+20 Conference, which recognized the economic and social significance of good land management, including soil, and its contribution to economic growth, biodiversity, sustainable agriculture and food security, eradicating poverty, women’s empowerment, addressing climate change and improving water availability.

Presentations delivered at the open informal session are available on the website of the United Nations coordination of outer space activities ([www.uncosa.unvienna.org](http://www.uncosa.unvienna.org)), and can also be accessed through the website of the Office for Outer Space Affairs ([www.unoosa.org](http://www.unoosa.org)).