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## **Economic and Social Commission for Asia and the Pacific**

Intergovernmental Meeting on Asia-Pacific Years of Action for Applications of Space Technology and the Geographic Information System for Disaster Risk Reduction and Sustainable Development, 2012-2017

Bangkok, 18-20 December 2012  
Item 7 of the provisional agenda\*\*

**Endorsement of the draft Asia-Pacific plan of action for applications of space technology and geographic information systems for disaster risk reduction and sustainable development, 2012-2017, and adoption of the report of the Meeting**

### **Asia-Pacific Plan of Action for Applications of Space Technology and Geographic Information Systems for Disaster Risk Reduction and Sustainable Development, 2012-2017**

*The Intergovernmental Meeting on the Asia-Pacific Years of Action for Applications of Space Technology and the Geographical Information System for Disaster Risk Reduction and Sustainable Development, 2012-2017,*

*Acknowledging* the endorsement of the outcome document of the United Nations Conference on Sustainable Development, entitled “The future we want”,<sup>1</sup> by Heads of State and Government and high-level representatives, with full participation of civil society, to renew the commitment to sustainable development and to ensure the promotion of an economically, socially and environmentally sustainable future for the planet and for present and future generations,

*Taking* into account the strong acknowledgement and key commitments of that outcome document with regard to information and communications technologies, especially in the areas of space and geographic information system applications, as shown in excerpts from that document below:

(a) Paragraph 65: We recognize the power of communications technologies, including connection technologies and innovative applications, to promote knowledge exchange, technical cooperation and capacity-building for sustainable development....

(b) Paragraph 187: .... We further recognize the importance of comprehensive hazard and risk assessments, and knowledge- and information-sharing, including reliable geospatial information....

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\* Reissued for technical reasons on 13 February 2013.

\*\* E/ESCAP/SASD/1.

<sup>1</sup> General Assembly resolution 66/288, annex.

(c) Paragraph 209: We reiterate the need for cooperation through the sharing of climate and weather information and forecasting and early warning systems related to desertification, land degradation and drought, as well as to dust and sandstorms, at the global, regional and subregional levels....

(d) Paragraph 274: We recognize the importance of space-technology-based data, in situ monitoring and reliable geospatial information for sustainable development policymaking, programming and project operations....

(e) Paragraph 277: We emphasize the need for enhanced capacity-building for sustainable development and, in this regard, we call for the strengthening of technical and scientific cooperation, including North-South, South-South and triangular cooperation....,

*Recognizing* that the outcome document urges the regional organizations to prioritize sustainable development through, inter alia, development and implementation of regional agreements, as appropriate, more efficient and effective capacity-building, and exchange of information, good practices and lessons learned through regional and cross-regional initiatives for sustainable development. In this regard, the enhancement of the United Nations regional commissions and their subregional offices in their respective capacities to support member States in implementing sustainable development was called for,

*Reaffirming* the commitment to the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters,<sup>2</sup> the outcome document calls for disaster risk reduction and building of resilience to disasters to be addressed with a renewed sense of urgency in the context of sustainable development and poverty eradication, and, as appropriate, to be integrated into policies, plans, programmes and budgets at all levels and considered within relevant future frameworks,

*Recognizing* that ESCAP has an important role in supporting developing countries to achieve the goals of sustainable development, including through, inter alia, “green economy” policies in the context of sustainable development and poverty eradication, in particular in countries with special needs, and in building the capacity of member States for harnessing space and geographic information system applications for sustainable development,

*Reiterating* the key elements of ESCAP resolution 68/5 on Asia-Pacific Years of Action for Applications of Space Technology and the Geographic Information System for Disaster Risk Reduction and Sustainable Development, 2012-2017,

*Recalling* the objectives of the Asia-Pacific Years of Action — to enhance efforts at the national and regional levels to broaden and deepen the contribution of space and geographic information systems to addressing issues related to disaster risk reduction and management, as well as environment and development, by increasing relevant activities at the national, subregional and regional levels,

Has formulated the Asia-Pacific Plan of Action for Applications of Space Technology and Geographic Information Systems for Disaster Risk Reduction and Sustainable Development, 2012-2017, which appears below.

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<sup>2</sup> A/CONF.206/6 and Corr.1, chap. I, resolution 2.

## **I. Towards disaster risk reduction and management**

1. Space and geographic information system applications can contribute significantly to disaster risk reduction and management by enabling comprehensive hazard and risk assessments, land use planning and disaster impact assessment. These applications are instrumental in establishing effective end-to-end early warning systems as part of effective disaster risk reduction at the regional, subregional and national levels, in order to reduce economic and social damage, including the loss of human life. The Asia-Pacific region is the most disaster-prone area in the world, having incurred more than 80 per cent of the global disaster losses in 2011. It is therefore necessary to promote and strengthen risk assessment and other disaster risk reduction instruments in a timely manner.

2. Space and geographic information system applications can play a crucial role in strengthening much needed cross-sectoral linkages in support of disaster risk reduction, response, recovery and long-term development planning. Geographic information system applications can also facilitate the integration of gender perspectives into the design and implementation of all phases of disaster management.

3. Space and geographic information system applications continue to be underutilized primarily because of the lack of capacity in developing countries in terms of human, scientific, technological, organizational and institutional resources and expertise for operational applications of these technical tools. In this regard, regional and subregional cooperation plays an important role in sharing expertise and promoting space and geographic information system applications for disaster risk reduction and management. Enhanced efforts at the national and regional levels are crucial to broaden and deepen the contribution of space technology and geographic information systems for disaster risk reduction and management.

4. To this end, the actions described below are proposed.

### **A. At the regional and subregional levels**

5. Regional cooperation should be strengthened by enhancing networking and harmonization among the relevant initiatives and efforts being made, and by enlarging the base of stakeholders around a common theme. There are several initiatives at the international level, namely the United Nations Institute for Training and Research (UNITAR) and its Operational Satellite Applications Programme (UNOSAT), the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER), the United Nations Global Geospatial Information Management, the Global Earth Observation System of Systems under the Group on Earth Observations and the International Global Monitoring Aerospace System; and at regional and subregional levels, such as the Asia-Pacific Regional Space Agency Forum, the Asia-Pacific Satellite Communications Council, the Asia-Pacific Space Cooperation Organization, the Regional Space Applications Programme for Sustainable Development, the Secretariat of the Pacific Community's Applied Geoscience and Technology Division, the Association of Southeast Asian Nations and the South Asian Association for Regional Cooperation (SAARC). These initiatives provide Earth observation information and satellite communication capabilities to strengthen disaster risk reduction and management efforts in the region.

6. Member States welcome proven initiatives, such as the International Charter on Space and Major Disasters, Sentinel Asia, Asia-Pacific Regional Space Agency Forum and the Regional Space Applications Programme for Sustainable Development, which may contribute Earth observation products and services, and satellite communications capabilities for disaster response and planning. With a view to enhance disaster management support systems in the region, the ESCAP secretariat should make concerted efforts through the existing Regional Space Applications Programme for Sustainable Development and other United Nations programmes, such as UNITAR and UNOSAT, to harmonize the various initiatives by widening and deepening cooperation on space and geographic information system applications, particularly at the regional level, in order to foster synergies and reduce duplication. Arrangements should be made for regular sharing of programmes of work, as well as cross-participation, joint delivery of capacity-building and other activities, so that member States can derive effective and timely benefits from these valuable initiatives, including access to Earth observation products and services, and establishment of reliable multi-hazard early warning systems.

7. The rapid advances in cutting edge space technology applications offer immense potential to improve the quality of services in disaster risk reduction and management. In this regard, it is important to promote the use of global navigation satellite systems (GNSS), such as the Global Positioning System of the United States of America, the Global Navigation Satellite System of the Russian Federation, the Galileo positioning system of the European Union, the Compass Navigation System of China, the Indian Regional Navigational Satellite System and the Quasi-Zenith Satellite System of Japan. A feasibility study should be conducted through international frameworks, such as Multi-GNSS Asia and the International Committee on GNSS, taking into consideration the diverse context of the region. The ESCAP secretariat should work with space agencies in member States to facilitate this process.

8. Information exchange and the sharing of good practices in space and geographic information system applications for disaster risk reduction and management should be enhanced and facilitated. Regional and subregional information-sharing platforms, such as the Asia-Pacific Gateway for Disaster Risk Management and Development and Sentinel Asia, need to be promoted and made operational. These platforms enable access to and capacity for space-based products and services, such as those for disaster monitoring and management, including hazard zoning and risk assessment, early warning, emergency communications, and impact mapping and damage assessment. Their contributions towards land and ocean observation conducted during the so-called Great East Japan Earthquake and floods in Thailand in 2011 provide remarkable examples. These platforms should also enable sharing of good practices in disaster risk reduction and management by following South-South, North-South and triangular cooperation strategies. The ESCAP secretariat should work closely with member States and other stakeholders to facilitate this process.

9. Capacity-building should be given high priority, especially in the context of high-risk and low-capacity developing countries. While there are initiatives at the regional and subregional levels that promote capacity-building, it is necessary to address capacity-building needs collaboratively. The ESCAP secretariat should work in close cooperation with various regional initiatives, partners and key stakeholders not only to foster synergy, but also to enhance the effectiveness of these efforts to address capacity gaps, particularly in high-risk and low-capacity developing countries in the region.

10. To this end, expert group meetings should be organized by the ESCAP secretariat, with the outcomes of those meetings implemented through ESCAP intergovernmental mechanisms, such as the Intergovernmental Consultative Committee on the Regional Space Applications Programme for Sustainable Development and the Committee on Disaster Risk Reduction.

11. Mutual understanding and dialogue should be promoted between disaster management authorities and space agencies in order to integrate space and geographic information system applications more effectively in disaster risk reduction and management. The ESCAP secretariat should encourage the participation of the respective stakeholders in intergovernmental meetings, including the Committee on Disaster Risk Reduction, the Intergovernmental Consultative Committee on the Regional Space Applications Programme for Sustainable Development.

12. The Regional Space Applications Programme for Sustainable Development should continue to enable specialized training and education and the sharing of good practices in applications, operations and policy development, with a special focus on least developed countries, landlocked developing countries and small island developing States. The education and training network<sup>3</sup> set up under the Regional Space Applications Programme for Sustainable Development should also be strengthened and enhanced as a key initiative for regional capacity-building.

13. Capacity-building efforts should bring together relevant United Nations agencies and institutions, subregional organizations, non-governmental organizations and other partners that have made significant contributions in this area. They include the Asian and Pacific Training Centre for Information and Communication Technology for Development (APCICT), the United Nations Environment Programme, the United Nations Office for Disaster Risk Reduction, UN-SPIDER, UNITAR, the Food and Agriculture Organization of the United Nations (FAO), the World Meteorological Organization, the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization, the International Centre for Integrated Mountain Development, the Asian Disaster Preparedness Center, the Asian Disaster Reduction Center, the SAARC Disaster Management Centre, the Centre for Space Science and Technology Education in Asia and the Pacific and the Geoinformatics Center of the Asian Institute of Technology.

*At the national level*

14. It is encouraged that space and geographic information system applications be included in national disaster risk reduction and management policies and regulation and implementation plans, with priority areas identified and established.

15. Mutual understanding and coordination across relevant government agencies needs to be strengthened, and dialogue should be promoted between disaster management authorities and space agencies to reduce information gaps, system incompatibilities and duplication. Institutional infrastructure and networking among relevant agencies should be strengthened.

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<sup>3</sup> Consisting of the National Remote Sensing Center of China, the Centre for Space Science and Technology Education in Asia and the Pacific in India and the National Coordinating Agency for Surveys and Mapping in Indonesia.

16. National spatial data infrastructure, data policies and data-sharing arrangements that would improve and ensure wider access to space-based data and products in a timely and affordable manner for disaster management planning and response, among other things, should be systematized and promoted.

17. National Governments should prioritize and support capacity-building and the creation of a critical mass of professionals in the applications of space and geographic information systems for disaster risk reduction and management, including through active participation in the capacity-building efforts of regional initiatives.

18. Experiences and good practices gained at the national level should be shared across the region, through regional cooperation initiatives, communities of practices, other innovative approaches and networks.

19. Space agencies, research organizations, non-governmental organizations as well as the private sector, including communication service providers and the geographic information system industry, should commit to provide services and products in support of disaster management, including rapid response.

## **II. Towards sustainable development**

20. The outcome document of the United Nations Conference on Sustainable Development emphasizes the importance of enhancing the capacity of Member States to manage natural resources sustainably and with lower negative environmental impacts in the context of sustainable development and poverty eradication. There are many areas where space and geographic information system applications can be put to effective use for natural resources management, food security and poverty eradication.

21. Space and geographic information system applications have demonstrated effective support for natural resources management and urban planning, and provide inputs for breaking the nexus between poverty and environmental degradation.

22. In particular, space and geographic information system applications can assist in the monitoring of vast areas of the Earth's land surface to identify high-risk drought-prone areas and feed into effective monitoring and early warning for drought. Such uses have pertinent impacts on food security and poverty, especially in the Asia-Pacific region, as many countries and

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