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Agenda items 3 (e) and 3 (f)

Review of issues pertinent to the subsidiary structure of the Commission, including the work of the regional institutions: Information and communications technology and disaster risk reduction

Draft resolution

Sponsored by: Japan

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

The Economic and Social Commission for Asia and the Pacific,

Recognizing that applications of space technology and geographical information systems have contributed significantly to address issues related to disaster risk reduction and management as well as sustainable development in the region,

Taking into account the strong acknowledgement and key commitments contained in the outcome document of the United Nations Conference on Sustainable Development, entitled “The future we want”,¹ in relation to information and communications technologies, especially in the areas of space and geographic information system applications,

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

Reiterating the key elements of resolution 68/5, recognizing the importance of regional cooperation and the significant impact that applications of space technology and geographic information systems can contribute to the areas of disaster risk reduction and disaster risk management, as well as environment and development,

¹ General Assembly resolution 66/288, annex.

Expressing appreciation to the Governments of Japan and Thailand for sponsoring and co-organizing the 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, which was held in Bangkok from 18 to 20 December 2012,

Expressing appreciation also to the Governments that participated in the Intergovernmental Meeting and committed support and contributions to the implementation of the Asia-Pacific Years of Action,

Welcoming the successful outcome of the Intergovernmental Meeting and taking note of the report of the Meeting,²

1. *Endorses* the Asia-Pacific Plan of Action for Applications of Space Technology and Geographic Information Systems for Disaster Risk Reduction and Sustainable Development, 2012-2017, as annexed to the present resolution;

2. *Requests* members and associate members to carry out activities relevant to the Asia-Pacific Years of Action and to provide continued support for activities to implement programmes, projects and capacity-building efforts identified in the Plan of Action;

3. *Encourages* members and associate members to inform the Executive Secretary on the steps taken to implement the Plan of Action;

4. *Requests* the Executive Secretary to accord priority to the implementation of the Plan of Action and to report to the Commission as requested in resolution 68/5.

² See E/ESCAP/69/25.

Annex

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”,^a 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....

(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,

^a General Assembly resolution 66/288, annex.

Reaffirming the commitment to the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters,^b 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.

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

^b A/CONF.206/6 and Corr.1, chap. I, resolution 2.

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^c 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.

^c 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.

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.

B. 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.

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 economies are agrarian based and drought prone.

23. Furthermore, satellite communications can, in a cost-effective manner, connect distant locations, including the most inaccessible mountainous areas, and the most isolated small island developing States, thus improving their connectivity.

24. Last but not least, the continued expansion and market penetration of global navigation satellite system applications for positioning, navigation and timing products and services, such as automated agriculture, efficient transportation, position-specific information service and urban management using mapping, show the pertinence of space applications for sustainable social and economic development.

25. Currently, while most countries in the region are aware of the importance and effectiveness of using space and geographic information system applications for supporting sustainable development, as in the case of disaster risk reduction and management, space and geographic information system applications continue to be underutilized primarily because of lack of capacity. Compounding the effects of such a gap are the limited number of initiatives and in situ observation networks and their insufficient resource base for providing free or low-cost space-based data, products and services to achieve sustainable development goals.

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

A. At the regional and subregional levels

27. There are multitiered cooperation initiatives at international and regional levels, including the Global Earth Observation System of Systems, the Committee on Earth Observation Satellites, the Regional Space Applications Programme for Sustainable Development and the Asia-Pacific Regional Space Agency Forum and its initiatives, such as Space Applications for Environment and the Regional Readiness Review for Key Climate Missions. Those initiatives should be promoted and harmonized, and their links with other initiatives strengthened, such as the Global Forest Observation Initiative and the Global Agricultural Monitoring Initiative of the Group on Earth Observations, as well as with the United Nations Initiative on Global Geospatial Information Management for Asia and the Pacific. The ESCAP secretariat should play an important role in harmonizing the regional initiatives and building partnerships with key initiatives at the global, regional and subregional levels.

28. A thematic working group should be established under the Regional Space Applications Programme for Sustainable Development, which might capitalize on the Regional Cooperative Mechanism on Disaster Monitoring and

Early Warning, Particularly Drought in order to enhance its work. The Mechanism should reach out to multilateral partners, such as UNITAR, the FAO-Global Information and Early Warning System, the World Food Programme, the Consultative Group on International Agricultural Research networks and UN-SPIDER, which are making effective contributions to drought-related early warning worldwide.

29. As with the efforts that have been made for improving drought monitoring and early warning and food security, regional cooperation initiatives should be similarly enhanced to make practical and operational use of space and geographic information system applications to support climate change adaptation and to address issues related to environment and development in areas beneficial to society, such as water resource management, food security, public health, forest monitoring and biodiversity.

30. Regional cooperation should enable access to the latest Earth observation products and services at low or no cost for use in sustainable development and related planning work, in accordance with the data-sharing principles agreed by all members of the Group on Earth Observations (GEO). Capacity-building initiatives on the use and analysis of Earth observation products should be continued through established international training and education networks. To align capacity-building efforts closely with needs and gaps on the ground, the ESCAP secretariat, in partnership with regional initiatives, should undertake needs assessments, especially for least developed countries, landlocked developing countries and small island developing States.

31. Given the technological prowess of the private sector and the policy objectives of the public sector, public-private partnerships should be supported as a key mechanism for enhancing the development of, and access to, information and communications technology, and space and geographic information system applications. The ESCAP secretariat may serve as the regional platform for pooling expertise and exchange good practices on information and communications technologies, and space and geographic information system applications in order to accelerate progress towards achieving a sustainable future.

B. At the national level

32. National Governments should incorporate space and geographic information system applications for supporting sustainable development into their policies, regulations, and midterm and long-term implementation plans.

33. National Governments are encouraged to allocate sufficient financial and human resources within their means to enable the use of space and geographic information system applications towards the planning and implementation of national initiatives.

34. Spatial and geographic information system products and services should be shared and made available at the national level through the establishment of national spatial data infrastructure, including data policy and arrangement, in order to ensure that all relevant applications for sustainable development are promoted.

35. National Governments are encouraged to utilize all relevant regional cooperation mechanisms to obtain, at little or no cost, the latest technologies, techniques and space-based information products and services towards sustainable development.

36. National Governments are encouraged to share their experiences and good practices across the region, through regional and subregional cooperation initiatives, communities of practices, other innovative approaches and networks.

37. Institutional infrastructure and networking among relevant institutions, such as community-based organizations, non-governmental organizations and the private sector, should be strengthened for the benefit of users.

38. National Governments should consider supporting capacity-building activities and the creation of a cadre of professionals in the domain of space and geographic information system applications for sustainable development.

39. National Governments should consider policies that encourage private sector participation, particularly to provide public services by using space and geographic information system solutions, to cover remote, underserved and mountainous or island areas. The private sector and academia should be involved in capacity-building initiatives.

III. Finance and resources

40. Commitment of resources, including financial, human and space-based products and services, software licences and customization of free and open-source software, and adoption of open standards by all stakeholders should be encouraged for the successful implementation of the Plan of Action.

41. Member States are strongly encouraged to prioritize inclusive, resilient and sustainable development in the allocation of resources in accordance with national priorities and needs while recognizing the crucial importance of enhancing financial support from all sources, including public-private partnership arrangements in the areas of space and geographic information system applications.

42. Member States and other stakeholders are encouraged to provide resources to implement programmes, projects and capacity-building efforts identified under the Plan of Action.

IV. The way forward

43. Representatives of members and associate members of ESCAP, together with relevant United Nations agencies and intergovernmental, regional and subregional organizations, convened in an intergovernmental meeting jointly organized by ESCAP and the Geo-Informatics and Space Technology Development Agency of Thailand, held in Bangkok from 18 to 20 December 2012, and formulated the present Plan of Action to express their common resolve to enhance regional cooperation regarding space and geographic information system applications for improving disaster risk reduction and management, as well as sustainable development in the region.

44. The Plan of Action should be submitted to the Economic and Social Commission for Asia and the Pacific for endorsement at its sixty-ninth session, in 2013. The ESCAP secretariat, in collaboration with all partners and stakeholders, should take the lead in implementing the Plan of Action at the regional level and facilitating its implementation at the national level. A midterm review of progress in implementing the Plan of Action should be undertaken in due course for submission to the Commission at its seventy-second session, in 2016.

45. A ministerial conference on space applications for disaster risk reduction and management and sustainable development in Asia and the Pacific should be organized in 2015 to evaluate the progress made in implementing the Plan of Action, provide further guidance for its successful implementation and build stronger political support and ownership among all stakeholders.
