
Economic and Social Commission for Asia and the Pacific

Committee on Disaster Risk Reduction

Fifth session

Bangkok, 10-12 October 2017

Item 8 of the provisional agenda*

Space applications for disaster risk reduction

Promoting regional cooperation on the applications of space technology and geographic information systems for effective disaster risk reduction***Summary*

Space technology and its applications have great potential to support the new global development agenda, in particular as a tool for the implementation, follow up and review of the 2030 Agenda for Sustainable Development and the Sendai Framework for Disaster Risk Reduction. Many countries in Asia and the Pacific already use space technology and its applications for various purposes, but significant gaps still exist between the spacefaring countries and those who lack the capacity to access space information and tools.

ESCAP's Regional Space Applications Programme for Sustainable Development (RESAP), is bringing together space agencies and related stakeholders to promote the greater use of space technology applications and Geographic Information Systems (GIS) for sustainable development and disaster risk reduction.

The Asia-Pacific Plan of Action for Applications of Space Technology and Geographic Information Systems for Disaster Risk Reduction and Sustainable Development, 2012-2017, under which RESAP has been implemented, is reaching its completion, and a new Asia-Pacific Plan of Action for Space Applications (2018-2030) is now under preparation.

The purpose of the present note is to inform the Committee about RESAP activities related to disaster risk reduction under the Asia-Pacific Plan of Action, 2012-2017 and about the status of preparations on the drafting of a new Asia-Pacific Plan of Action for Space Applications (2018-2030), and to seek further guidance.

I. Background

1. ESCAP has been supporting regional cooperation to enhance access to space applications and geospatial information in Asia and the Pacific for more than 20 years through its long-standing Regional Space Applications Programme for Sustainable Development (RESAP), which brings together space agencies and related stakeholders under one common purpose - to discuss and address the challenges of space technology applications and Geographic Information Systems (GIS) for disaster risk reduction and sustainable development.

* E/ESCAP/CDR(5)/L.1.

** This document is being issued without formal editing.

2. Conceived in the mid-1990s, RESAP was established to enhance regional coordination and cooperation in effective promotion of applications of space technology for sustainable development in Asia and the Pacific. Over the years, RESAP has developed into a growing network of countries, space-related organizations and other stakeholders that has helped to promote the use of innovative applications of space technology in the region.

3. Since 2012, the work of RESAP has been guided by 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 Asia-Pacific Plan of Action, 2012-2017), adopted under ESCAP Resolution 69/11. It defined a set of actions at the regional, subregional and national level in the following areas: (a) disaster risk reduction and management, (b) sustainable development, and (c) finance and resources.¹

4. With the adoption of the 2030 Agenda for Sustainable Development, the Sendai Framework for Disaster Risk Reduction and the Paris Agreement on Climate Change, space technology applications were identified as essential implementation tools, particularly for monitoring and attaining the Sustainable Development Goals. At the same time earth observation technology and its applications are rapidly evolving and becoming increasingly more accessible; a trend which is likely to continue in the future. Our success in implementing the 2030 Agenda will be crucial for how we will leave our Planet to future generations.

5. Considering these developments and the completion of the Asia-Pacific Plan of Action, 2012-2017 with the end of this year, there is now a unique opportunity to take a fresh look at RESAP and to consider its future role.

6. The Committee on Disaster Risk Reduction is invited to provide its comments on the activities conducted under the Asia-Pacific Plan of Action, 2012-2017, and to provide guidance for the drafting of a new Asia-Pacific Plan of Action for Space Applications (2018-2030).

II. Activities under the Asia-Pacific Plan of Action, 2012-2017

7. Within the Asia-Pacific Plan of Action, 2012-2017, the focus of the work of the secretariat has been on the following core activities (a) building stronger partnerships for regional cooperation in space applications; (b) the timely provision of near real-time satellite imagery to disaster-affected countries; (c) the Regional Drought Mechanism; (d) skills and capacity to address existing gaps and emerging challenges; and (e) institutional development through knowledge products, standards and procedures.

8. Activities conducted under the Asia-Pacific Plan of Action, 2012-2017 were presented as a progress report by the secretariat to the twentieth session of the Intergovernmental Consultative Committee on the Regional Space Applications Programme for Sustainable Development in Asia and the Pacific (ICC), held from 31 October to 1 November 2016 in New Delhi, India, and subsequently to the seventy-third session of the Economic and Social Commission for Asia and the Pacific:²

¹ E/ESCAP/69/L.6.

² E/ESCAP/73/20, paras. 11-26.

a. Building strong partnerships for regional cooperation in space applications

9. The secretariat delivers its work through the RESAP network and in partnership with national, regional and international organizations, including space, meteorological and hydrological agencies, disaster management organizations, specialised training centres and technical institutions, and relevant coordination mechanisms and United Nations entities.

10. The RESAP cooperation and capacity-building activities are generously supported by the RESAP network and other partner institutions.

b. Timely provision of near real-time satellite imagery to disaster affected countries

11. The secretariat, during times of disaster and upon the request of member States, provides support through the facilitation of access to near real-time satellite imagery and geospatial data. This is possible because of ESCAP's strategic partnership with the Operational Satellite Applications Programme of UNITAR and through the RESAP network. Subsequently, disaster-affected member States can receive support for effective emergency response, post-disaster damage and impact assessment and policy advice on recovery and rehabilitation, even if the Charter has not been triggered. Such services are of particular benefit to countries with special needs, that normally lack the necessary infrastructure and institutional arrangements required to access and maintain their own well-integrated monitoring, early warning and response mechanisms.

c. The Regional Drought Mechanism

12. Operating under RESAP, the Regional Drought Mechanism is a good example of the benefits of regional cooperation. The mechanism, brings together countries experienced in utilizing space applications and countries who could use the information and tools, but lack the knowledge or capacity to do so. By facilitating access to space and GIS applications, it enhances the capacity of drought-prone countries to utilize integrated space and in-season ground data and information for drought monitoring and early warning, and in this way helps to build the resilience of agrarian communities that are perennially affected by drought.

13. Beyond this, ESCAP is facilitating cooperation with countries experienced in other aspects of drought management and is increasingly expanding its work to incorporate seasonal forecasts, longer term risk analysis, water catchment assessment and accounting, and other tools and services for managing and adapting to drought. Overall, the objective of the Regional Drought Mechanism is to create a toolbox or menu of products, information and services, provided by various countries or institutions and through regional cooperation link up drought-prone developing countries and expand their capacity to use these innovative tools.

d. Capacity-building to address existing gaps and emerging challenges

14. Although the Asia-Pacific region has a growing number of spacefaring countries, space technologies and their applications are not yet equally benefitting all countries because of the lack of capacity in terms of human, scientific, technological, and institutional resources. The secretariat supports capacity development for member States through a series of specialized programmes, carried out within the overall framework of the RESAP.

The focus areas include mainstreaming space applications into disaster risk management; the use of space and GIS in flood-risk mapping, drought monitoring and early warning; and facilitating the establishment and use of the geo-referenced information systems for disaster risk management in countries with special needs. Additionally, several other training courses, master's and bachelor's degrees have been funded by fellowship programmes facilitated by ESCAP through its RESAP training network. More recently, the secretariat has worked on strengthening the capacity of Pacific small island developing countries on the use of space technology and GIS applications for disaster risk management and early warning systems.

e. Institutional development through knowledge products, standards and procedures

15. The secretariat has also supported ASEAN member countries, particularly countries with special needs, by developing three handbooks on using space applications for disaster management, based on requests received from member States. These handbooks have been developed with partner UN agencies and the ASEAN AHA Centre and form part of the UN-ASEAN Joint Strategic Plan of Action on Disaster Management under its 'Risk Aware' pillar, which ESCAP has been tasked to lead.

16. The first handbook is a set of Procedural Guidelines for sharing space-based information during emergency response. The second is a Geospatial Decision Support Handbook for Specific Hazards. It provides an overview of the nature of different hazards and the geospatial information elements related to each, in order for decision-makers to better understand the disaster scenario and related decision which are specific to each hazard. The third has evolved into an adaptation of the recently published manual on Rapid Assessment for Resilient Recovery, using innovative tools, techniques and space applications for the SAARC region. It is designed to provide a guideline to enhance the capacity of practitioners of government agencies on conducting rapid Post-Disaster Needs Assessments.

17. A progress report on all RESAP activities conducted in 2016 and 2017 will be presented to the ICC at its twenty-first session, held in parallel with the fifth session of the Committee on Disaster Risk Reduction.³

III. Status of Development of the Asia-Pacific Plan of Action for Space Applications (2018-2030)

18. Pursuant to a recommendation of the twentieth session of the ICC held in connection with the Asia-Pacific Space Leaders Forum in 2016, the Asia-Pacific Plan of Action for Space Applications (2018-2030), is presently under development in consultation with relevant stakeholders. Based on

³ E/ESCAP/ICC(21)/2.

a working paper prepared by the secretariat,⁴ the ICC made a number of key recommendations for drafting the plan.^{5,6}

19. The seventy-third session of the Economic and Social Commission for Asia and the Pacific considered the role of space applications for the 2030 Agenda for Sustainable Development and was informed about the work of the ICC and the status of the work on the Asia-Pacific Plan of Action for Space Applications (2018-2030).⁷

20. The Commission acknowledged the importance of utilizing space applications and ICT as vital tools for addressing disaster risks and supported the secretariat's initiatives on greater use of space applications for sustainable development and disaster risk reduction in the Asia-Pacific region.⁸

21. Inputs are also being sought from various intergovernmental platforms across the secretariat and through other international organizations and platforms in drafting the new Plan of Action. In particular, the secretariat is seeking views from the space community as well as from entities not traditionally involved in using space applications, but who could benefit from it, such as entities in the fields of statistics, agriculture, water, coastal and ocean management, disaster risk management, health, environment, social development, and urban planning.

22. The secretariat has conducted a survey on the use, needs, gaps and challenges faced by Asia-Pacific countries in accessing and effectively using space applications (2017 RESAP Survey). The survey will inform the development of the Asia-Pacific Plan of Action for Space Applications (2018-2030). The Survey received a high response rate, with the majority of RESAP members responding. The secretariat also received responses from seven countries that are not RESAP members. A consolidated summary of the replies received from Armenia, Australia, Bhutan, Fiji, Iran (Islamic Republic of), Japan, Kazakhstan, Kiribati, Korea (Democratic People's Republic of), Mongolia, Myanmar, Nepal, Philippines (the), Singapore, Solomon Islands, Sri Lanka, Thailand, Tonga, Vanuatu, and Hong Kong, China will be presented to the ICC at its twenty-first session.⁹

23. With RESAP now in its 22nd year of implementation, with no comprehensive evaluation having taken place before, the secretariat plans to conduct an independent external evaluation of the work of RESAP under the Asia-Pacific Plan of Action, 2012-2017, the results of which will also contribute to the development of the Asia-Pacific Plan of Action for Space Applications (2018-2030).

⁴ UNESCAP, Working Paper, "Towards a new Asia-Pacific strategy for using space applications to support the 2030 Agenda for Sustainable Development: an opportunity for the space community to shape a sustainable future", <http://www.unescap.org/resources/towards-new-asia-pacific-strategy-using-space-applications-support-2030-agenda-sustainable>.

⁵ UNESCAP, Summary Meeting Report of the 20th Session of the Intergovernmental Consultative Committee (ICC) on the Regional Space Applications Programme for Sustainable Development for Asia and the Pacific (RESAP), New Delhi, India, 31 October-1 November 2016, http://www.unescap.org/sites/default/files/Final%20report_20thICC.pdf.

⁶ E/ESCAP/73/20, paras. 27-30.

⁷ E/ESCAP/73/20.

⁸ E/ESCAP/73/41, para. 107.

⁹ E/ESCAP/ICC(21)/3.

24. A draft outline of the Asia-Pacific Plan of Action for Space Applications (2018-2030) will be presented for discussion to the ICC at its twenty-first session¹⁰. Based on the feedback received from discussions with member States and other stakeholders, it is proposed that the Plan of Action will consist of a RESAP strategy covering the period 2018-2030 and a set of staggered four-year work plans. The strategy will closely link RESAP to the implementation of the Regional Road Map for Implementing the 2030 Agenda for Sustainable Development in Asia and the Pacific and to the conference structure of the Commission. The initial four-year work plan will cover the period 2018-2022. The strategy as well as the initial and subsequent work plans will be endorsed by Asia-Pacific Ministerial Conferences on Space Applications which is proposed to be held every four years, while the ICC will review and guide the annual work of RESAP.

25. Following the conclusion of the present session of the Committee, the draft outline will be further refined, based on the input received, and presented to relevant international and regional platforms, such as the meetings of the Group on Earth Observations and the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM), the twenty-fourth session of the Asia-Pacific Regional Space Agency Forum (APRSAF-24), to be held in Bengaluru, India, from 14 to 17 November 2017, and the seventy-fourth session of the Commission in 2018.

26. A final draft of the Asia-Pacific Plan of Action for Space Applications (2018-2030) will be presented for its endorsement to the third Asia-Pacific Ministerial Conference on Space Applications¹¹, which is proposed to be held in early 2019 in association with the twenty-second session of the ICC, and, finally, for its adoption to the seventy-fifth session of the Commission in 2019.

IV. Issues for Consideration

27. The Committee is invited to consider the issues presented in this information note and to provide guidance.

¹⁰ E/ESCAP/ICC(21)/4.

¹¹ Resolution 69/11 on the 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, requests the Secretariat to organize a ministerial conference on space applications for disaster risk reduction and management and sustainable development in Asia and the Pacific.