
Economic and Social Commission for Asia and the Pacific
Intergovernmental Consultative Committee on the
Regional Space Applications Programme for Sustainable Development
Twenty-fourth session
18-19 August 2020
Video Conference via MS Teams

Summary Meeting Report
Prepared by the Secretariat**

Summary

The twenty-fourth session of the Intergovernmental Consultative Committee (ICC) on the Regional Space Applications Programme for Sustainable Development in Asia and the Pacific (RESAP) was held online on 18-19 August 2020.

The Committee reconfirmed its commitment to support the Asia-Pacific Plan of Action for Space Applications (2018-2030), referred hereafter as the Plan of Action, and was informed of the progress of implementation by the RESAP member countries, which included good practices in supporting response and recovery of COVID-19. In addition, the secretariat briefed the Committee on 1) the progress of ESCAP in implementing the Plan of Action; 2) the results of a survey of RESAP member needs and contributions relating to the Plan of Action; and 3) the upcoming publication “Geospatial information applications for sustainable development in Asia and the Pacific”. Several partner organizations were also invited to participate in the meeting as observers and introduced their work that contributes to the Plan of Action. The Committee discussed and identified the priority needs and contributions for the implementation of Phase I (2018-2022) and provided details of how space applications has been able to support action against COVID-19.

The Committee recognized the urgency and importance of capacity building for implementing the Plan of Action and to scale up the use of space science, technology and geospatial information applications to support achieving the Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction in the Asia-Pacific region. The Committee requested the secretariat to enhance its effort to assist member countries in improving the use and sharing of geospatial information for resilient and sustainable development and implementation of the Plan of Action.

The present document contains the summary report of the meeting.

* E/ESCAP/ICC(24)/4

** This document is being issued without formal editing.

I. Conclusions and Recommendations

1. The Committee reconfirmed its commitment to support the implementation of the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018-2030) and promote regional cooperation and sharing of geospatial data for emerging challenges such as COVID-19.
2. The Committee recognized the urgency and importance of capacity building for implementation of the Plan of Action and of scaling up the use of space science, technology and geospatial information applications to support achieving the Sustainable Development Goals and Sendai Framework for Disaster Risk Reduction in our region.
3. The Committee requested the secretariat to focus on activities that will support the top 20 priority needs identified from the survey of needs and contributions as a focus for Phase I of the Plan of Action, and further requested the secretariat to develop and facilitate the participation of member States in various capacity building programmes for specific thematic priority areas
4. The Committee requested the secretariat to enhance regional cooperation on SPACE+: digital innovations, engagement of youth, end-users, private sector, and partnership, and encouraged the RESAP member States to contribute to the initiatives on One-data-One-map-One-platform and regional geospatial information platform, which will facilitate sharing and integrating geospatial data for implementation of the Plan of Action.
5. The Committee welcomed more inputs from RESAP members on their work, and agreed to continue to provide good practices for future publications on space applications in Asia-Pacific, and requested the secretariat to enhance the sharing of knowledge and experiences through the innovative One-stop Portal: Geospatial innovations for sustainable development.
6. The Committee supported the preparation for, and participation in, the 4th Ministerial Conference on Space Applications for Sustainable Development in Asia and the Pacific to be held during the second half of 2022 in Indonesia.
7. The Committee expressed its appreciation on efforts made by the secretariat and partners who supported the capacity building needs, including the Centre for Space Science and Technology Education in Asia and the Pacific (CCSTEAP), the United Nations Institute for Training and Research, UNITAR's Operational Satellite Applications Programme (UNITAR/UNOSAT), the Chinese Academy of Sciences (RADI), the ASEAN Research and Training for Space Technology and Applications (ARTSA), the Asia-Pacific Regional Space Agency Forum (APRSAF), the Asian Disaster Preparedness Center (ADPC), Multi-GNSS Asia (MGA), among other partners, and encouraged greater partnership to support various capacity building needs.
8. The Committee encouraged deepening the partnership with GEO/AOGEO in supporting Pacific island countries to achieve the SDGs, and to strengthen collaboration with existing partners in implementation of the Plan of Action. In this regard, the Committee welcomed the participation of the SPC and encouraged greater collaboration to address the needs of Pacific island countries.
9. The Committee congratulated the Government of the Philippines on the establishment of the Philippine Space Agency and welcomed their active participation in the future.

10. The Committee welcomed offers from Indonesia and Thailand on sharing the platform and methodology in geospatial information applications for crop monitoring and COVID-19.
11. The Committee welcomed offers from the National Institute of Environment Research (NIER) of Republic of Korea on provision of space-derived data for air quality monitoring and capacity building and requested the secretariat to support countries with needs to better utilize these data in developing their capacity.
12. The Committee requested the secretariat to circulate the report of the meeting for ICC members' approval by 31 August 2020, via email. Comments received by the ICC participants by 21 September 2020 were incorporated and this final version is considered reviewed and approved by all ICC members.

II. Organization of the Meeting

13. The twenty-fourth session of the Intergovernmental Consultative Committee (ICC) on the Regional Space Applications Programme for Sustainable Development in Asia and the Pacific (RESAP) was held online due to COVID-19 on 18-19 August 2020. The meeting was organized by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) in connection with the third session of the Committee on Information and Communications Technology, Science, Technology and Innovation on 19 August 2020.
14. The meeting documents and presentations made at the meeting are available from the meeting webpage.¹

III. Attendance

15. The meeting was attended by delegations from the following ESCAP member and associate member States: Armenia, Australia, Bangladesh, Bhutan, Cambodia, China, Hong Kong, China, India, Indonesia, Iran (Islamic Republic of), Japan, Mongolia, Myanmar, Nepal, Pakistan, Papua New Guinea, the Philippines, the Republic of Korea, the Russian Federation, Singapore, Sri Lanka, Tajikistan, Thailand, Uzbekistan and Viet Nam.
16. Representatives of specialized agencies and related organizations representing the United Nations Institute for Training and Research (UNITAR) Operational Satellite Applications Programme (UNOSAT), and the World Meteorological Organization (WMO) also attended the meeting.
17. Representatives from other entities including the Asian Disaster Preparedness Center (ADPC), Asia-Pacific Regional Space Agency Forum (APRSAF), the Asian Institute of Technology (AIT), the Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP), Multi-GNSS Asia (MGA), National Institute of Environmental Research (NIER), and the Secretariat of Pacific Community (SPC) also attended the meeting.
18. The list of meeting participants is available in document E/ESCAP/ICC(24)/2.

¹ See <https://www.unescap.org/events/24th-session-intergovernmental-consultative-committee-icc-regional-space-applications>

IV. Proceedings

A. Opening of the session

19. Before the opening, a short video clip entitled “Working together to combat COVID-19” prepared by the secretariat was played. It consists of several good examples from RESAP members on use of geospatial information and innovative technology for COVID-19 response.
20. The twenty-fourth session of the Committee was opened with welcome remarks delivered by Ms. Tiziana Bonapace, Director of the Information and Communications Technology and Disaster Risk Reduction Division (IDD) of ESCAP. Ms. Bonapace highlighted the growing recognition of RESAP member countries on the role of space applications for tackling regional and global challenges, such as COVID-19. She urged stronger regional cooperation to address the need to connect spacefaring data supply countries and data-user countries so that geospatial data can be shared across the region in a more open, compatible and systematic manner in support of global initiatives.

B. Election of the officers

21. Mr. Pakorn Apaphant, Executive Director of Geo-Informatics and Space Technology Development Agency (GISTDA), Thailand and Ms. Ganjuur Sarantuya, Director of Information and Research Institute of Meteorology, Hydrology and Environment, National Agency for Meteorology and Environment Monitoring, Mongolia were nominated as Co-Chairs to the twenty-fourth session of the Committee.

C. Adoption of the agenda

22. The meeting adopted its agenda as contained in document E/ESCAP/ICC(24)/1, without any changes.

D. Reconfirmation of the membership of ICC

23. No changes to the focal points of ICC on RESAP and status of the RESAP membership.

E. Progress report on implementation of the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018 – 2030)

24. The secretariat briefed the Committee on the progress made in implementing the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018 – 2030) within ESCAP, and provided an overview of the support to disaster affected countries through RESAP in the form of satellite imagery and data, and the sharing of good practices on space applications through webinars, publications and training programmes. Capacity development through CSSTEAP, ARTSA, RADI, GISTDA and online training was highlighted, along with the work on drought and crop monitoring in the region with the support of China, India, the Russian Federation and Thailand. Issues raised for consideration of the Committee included their views on enhancing regional cooperation on Space+ initiatives such as engaging digital innovation, youth, end-users, the private sector and other partnerships. The secretariat requested further guidance from ICC members on initiatives such as One Data – One Map – One Platform, work on using space applications for air and water pollution monitoring through regional partnership, and preparations for the fourth Ministerial Conference on Space Applications for Sustainable Development in Asia and the Pacific to be held in the second half of 2022 in Indonesia.

F. Survey on needs and contributions to the implementation of the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018 – 2030), Phase I (2018-2022)

25. The secretariat presented the results of a survey circulated in 2019 on the needs of member States relating to the Plan of Action, possible contributions and support that can be provided through regional cooperation, and the top priority needs and focus actions. The survey received 17 responses from member States, associate member States and an international institution. The top 20 priority needs covered the use of space applications for health, urban development, disaster risk reduction and resilience, forestry, land use, and climate change. Several respondents also suggested contributions and support that they could provide in terms of capacity building, examples of good practices, expert advice, data, imagery, applications and software. Details of the survey results were outlined in document E/ESCAP/ICC(24)/3.

G. ESCAP publication “Geospatial information applications for sustainable development in Asia and the Pacific”

26. The secretariat presented the key recommendations from the publication “Geospatial information applications for sustainable development in Asia and the Pacific”, which was due to be released in November 2020. The publication recommended that policies to make geospatial data and tools accessible, available, achievable and affordable with the support of all stakeholders, including industry, academia and the private sector.
27. Seven key success factors emerged from the review and analysis of over 100 practices and examples contributed by countries and organizations in the region. These examples demonstrated that fully leveraging geospatial information for development doesn't happen spontaneously, but rather requires well-designed and coordinated national and regional initiatives, policies, and openness to effect the desired changes. The secretariat also outlined a proposal to develop a one-stop portal for geospatial innovations for sustainable development based on the good practices provided. This would help government officials see the potential use of space applications and provide examples that could be translated to other countries and/or high-level policy makers who do not necessarily have a background in space applications.

H. Country Presentation: Achievements and future plans on implementation of the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018 – 2030)

28. RESAP members then presented their achievements, good practices, future plans and needs for implementing the Plan of Action. In addition, countries outlined their response to COVID-19 and how space applications supported this. Presentations were made by Armenia, Bangladesh, Bhutan, China, Hong Kong, China, India, Indonesia, Iran (Islamic Republic of), Myanmar, Nepal, the Philippines, Sri Lanka and Thailand.
29. The representative of Thailand from the Geo-Informatics and Space Technology Development Agency (GISTDA) reported on Thailand's national plan and ‘*Thailand's 20-year National Strategy*’ on how they are developing effective tools and mechanisms for future growth. Some of these mechanisms include the launch of the THEOS-2 satellite and Earth observation programme, and their actionable intelligence policy (AIP) platform. This platform looks at implementing a range of initiatives to support policy making and work towards achieving the SDGs. Through GISTDA, Thailand is also expanding the Crop Monitoring System with ESCAP as an implementing partner, to help neighbouring countries in personal training and workshops, technical exchange and

platform building in forest fire management and crop monitoring. GISTDA is also planning to share their knowledge on the COVID-19 platform development with other ASEAN countries.

30. The representative of Armenia presented their National Centre for Crisis Management and the various data streams that feed into its daily emergency responses. Such sources include the network of subway CCTV cameras, the automatic urban fire alert system, GNSS service vehicle tracking, natural disaster forecasting and modelling and nation-wide accident data. Worrying COVID-19 trends were highlighted, however a national online map and a mobile application have been developed to effectively track the virus spread.
31. The representative of Bangladesh reported on the progress of the Bangladesh Space Research and Remote Sensing Organization (SPARRSO) and other national stakeholders in contributing to the Plan of Action in three thematic areas: disaster risk reduction and resilience, natural resource management and social development. The representative highlighted flood mapping and the disaster-related framework for researchers under the umbrella of APSCO in the disaster-related section. Under the natural resource management theme, several projects were carried out for crop monitoring, mapping of coastal zones and river delineation. Digital enumeration area mapping was conducted with the national census data acting as an input under the social development thematic area. Lastly, the representative described how SPASSRO is going to continue and expand the use of space applications for food production and ecosystem protection activities in the future.
32. The representative of Bhutan gave an overview of current space applications and technology used in the country. Some of these include the VSAT network for emergency communications and connectivity, data collection from GLOF stations to identify areas of disaster risk, satellite imagery for land mapping and weather forecasting using Himawari satellite data. The representative then highlighted the importance of space applications for other areas and activities, including natural resource management, urban planning, tele-medicine services and data analysis for energy and climate related indicators. They noted their challenges in implementation, which includes a lack of capacity, and difficulties in using free satellite data due to the terrain, which is mountainous and therefore requires costly, higher resolution data. The representative also noted their current progress in developing a Space Policy and internal Space Strategy document for a national space program.
33. The representative of China described their activities as the RESAP national focal point, such as disaster-related activities, including the Drought Watch Mongolia project facilitated by ESCAP, and the Chinese Earth observation contributions to the International Charter on Space and Major Disasters. Global resource management initiatives were presented, including a hierarchical approach to crop monitoring. A road network density was mapped for the eastern hemisphere as part of the connectivity thematic area. They also outlined the TanSat carbon monitoring solar-induced chlorophyll fluorescence studies in the context of climate change research. In addition, several all-encompassing solutions were listed in the realms of data sharing, training and GNSS, which relates to the recent operationalization of the Beidou constellation. Lastly, China outlined their COVID-19 research and mapping.
34. The representative of the Indian Space Research Organization (ISRO) described the multiple ways in which they contribute to the 2030 Agenda for Sustainable Development, including natural resource conservation, disaster-resilient communities, health and climate change-induced impacts, renewable energy and capacity building. The contributions of the National Information System for Climate and Environment Studies

(NICES) to climate change monitoring were described, along with the Decision Support Center's actions during recent natural disasters to emphasize interagency cooperation and the implementation of multi-tier technical solutions. Several social development best practices were outlined, including crop insurance programmes and other solutions to support people and small businesses. Several tracking and mapping projects were carried out in the last several months to combat the COVID-19 spread, including the Chennai "Food for the Needy" programme aimed at the most vulnerable communities affected by the lockdown measures. Finally, the Government's strategic shift to the private space sector development was highlighted as part of India's recent policy making developments.

35. The representative of Indonesia made a presentation on how the National Institute of Aeronautics and Space (LAPAN) contributes to the Sustainable Development Goals 2, 6, 11, 13, 14 and 15, as well as the Plan of Action. The paddy fields growth monitoring and vegetation analysis activities were conducted recently as part of the Natural Resource Management work stream on the Java and Sumatra islands, respectively. Watershed area land cover change monitoring was also carried out in a comprehensive study, covering the last three decades in the in the Citarum, Ciliwung and Cisadane areas. A novel coronavirus spread risk model was built for the country's two most populous cities, Jakarta and Surabaya, with vulnerability information derived from remote sensing data. Lastly, the representative listed the plans for Indonesia, including the trilateral LAPAN-GISTDA-ESCAP "Improving the use and sharing of geospatial information for resilient and sustainable development (2018-2020)" project implementation. Indonesia also expressed its interest to participate in the upcoming 2020-2023 ESCAP project on "Building partnerships for geospatial air pollution information" together with NIER and the Korea International Cooperation Agency.
36. The representative of the Islamic Republic of Iran presented the achievements of the Iranian Space Agency. The representative gave a brief overview of the international cooperative mechanisms they participate in, including APSO, the COPERNICUS Emergency Mapping Service and the International Charter on Space and Major Disasters. He proceeded to describe the best practices utilized in the domains of fire, flood and dust monitoring, highlighting a link between dust and air pollution and presenting a project related to the latter issue. He concluded by giving an overview of the ongoing national monitoring of drought and plant stress.
37. The representative of the Department of Meteorology and Hydrology of Myanmar outlined their use of space applications, such as satellite data and hazard mapping for disaster risk reduction, mitigation, preparedness, relief and recovery. It was also highlighted that weather research forecast was being undertaken for forecast and warning dissemination. The drought monitoring system, provided by ESCAP with the support of India and China, was recognized as an area where satellite imagery is being used for a drought early warning system. The on-going 'One Map Myanmar' project was introduced which focuses on four key areas, one being to strengthen the capacities of government and civil society in the use and management of geospatial data. Areas for which they noted limitations and require additional support included mapping for landslide, storm surge, sea-level rise, etc.; drought early warning; air pollution monitoring; limited budget, knowledge, capacity, and availability of specific tools and well-trained personnel; and lack of access to high resolution space-derived data.
38. The representative of Nepal highlighted the importance and growing use of geospatial information and space applications for development, planning, implementation and monitoring within the country. Due to the frequency of natural disasters, several disaster risk reduction and resilience strategies were highlighted, including an early warning system for heavy rainfall and flood, real-time forest fire information and landslide risk

assessments. They emphasized that they are using a DEM of 30m resolution which is not adequate for developing reliable flood data, particularly for a country with mountainous areas. Mapping techniques are also being undertaken to manage natural resources through land cover and forest monitoring and mapping. The representative highlighted areas of space application use for connectivity, social development, energy and climate change. The collaboration on data sharing among Government and other partner organizations, NGOs and the private sector was emphasized as well as the implementation of the Spatial Data Infrastructure Policy within Nepal. The representative noted that the country's limitations included a lack of resources in different sectors, especially relating to their technical capacity, limited data and data consistency, lack of a database management system, lack of access to high resolution satellite imagery and the lack of a web-based data management system.

39. The representative of the Philippines demonstrated the country's various contributions to the Plan of Action. He began by demonstrating the upgraded weather bureau website and several climate change-related and disaster-related projects, such as CORDEX, GeoriskPH, Geo-SAFER Mindanao, FRAMER, GuHeat Manila, Fire Check, DATOS and CENVI. The projects are being implemented in different geographical regions and are aimed at analysing risk, implementing early warning and improving data infrastructure. A range of novel coronavirus-related geospatial solutions were then presented, including the COVID-19 Philippines LGU Monitoring Platform. The representative highlighted the main cross-cutting needs for his country, namely building a user-friendly data hub for socioeconomic, land use, transport and environmental data. The presentation was concluded by a policy brief of space-related laws which entered into force in 2019-2020, including the establishment of Philippine Space Agency (PhilSA).
40. The representative of Sri Lanka, from the Arthur C. Clarke Institute for Modern Technologies (ACCIMT), shared information on an important national survey undertaken by the institution entitled 'Space Technology applications for Sustainable Development: National Survey on the Current and Potential Use among Public Sector Organizations', which is in line with the Plan of Action. The survey, whilst primarily aiming to assess the potential impact of space technology and applications across participating public agencies and to identify the interventions needed for enabling those institutions to harness and benefit from space applications, also attempts to identify the issues affecting effective policy development in this domain which is necessary for optimal harnessing of the technology in country's drive for sustainable development. The outcome is expected to generate important inputs to guide and inform the process of policy development in this domain.
41. The representative from Hong Kong, China, shared the experience of the Hong Kong Observatory (HKO) in using space applications within the six thematic areas. Some of these include disaster risk reduction through disseminating early alert information via HKO website, mobile devices and social media platforms, etc. for the Super Typhoon Mangkhut in 2018, collecting crowdsourced damage photos for post-disaster assessment and compiling an online interactive map of damage brought by Mangkhut for the general public to access. The representative also demonstrated the web-based GIS platform developed by HKO that aims to enhance flight safety in the Asia-Pacific region by using software to automatically analyse en-route hazardous weather based on geostationary meteorological satellites, numerical weather prediction model output, pilot reports and other data. The applications of deep learning models for nowcasting of severe weather, auto-detection of atmospheric gravity waves and assessing traffic congestion were also described.

I. Partner Organizations Presentation: Achievements and future plans on implementation of the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018 – 2030)

42. Presentations were then made by partner organizations and international institutions. Under this agenda item, Mr. Limseok Chang of the National Institute for Environmental Research (NIER) for the Republic of Korea was invited to make a special presentation on the Geostationary Environment Monitoring Spectrometer (GEMS) and Pandora Asia Network (PAN) which will support greater access to air quality data for Asian countries. The presenter proposed that several countries in South-East Asia, South Asia and North-East Asia could collaborate by having the Pandora instrument installed and helping to validate the satellite data. In return, the country can obtain access to this information and participate in capacity building to teach technicians and government officials how to process and use the data for air pollution monitoring and management. Both Sri Lanka and the Philippines requested to participate in these activities.
43. Mr. Akira Kosaka then made a presentation “Advancing Diverse Links Towards a New Space Era” on behalf of APRSAF. The Nagoya Vision was presented, which was an outcome of APRSAF-26 held November 26-29, 2019. New initiatives relating to (SAFE), JICA-JAXA Network for Utilization of Space Technology (JJ-Nest) and the National Space Legislation Initiative were also presented. With reference to the last initiative, a study group has been established with experts from nine countries to draft a report on the status of national space legislation in the region. Mr. Kosaka noted that, due to COVID19, APRSAF has been postponed to 2021 and an online event will be held later in 2020.
44. Mr. Prakash Chauhan, CSSTEAP outlined their activities under the presentation “Capacity Building in Asia Pacific Region”, which included educating 2394 participants from 36 countries from the Asia-Pacific region over the past 25 years in their Postgraduate and Short course programmes. Included in this are their regular scholarship programme which trained around 80 young professional officials from ESCAP member States with the support of ESCAP. They also provided an overview of a number of short courses they have run since the last ICC on disaster risk reduction, connectivity, geospatial information for health, and other issues.
45. Mr. Andrew Jones of the Pacific Community (SPC) presented “Big Earth Data for Sustainable Development in the Pacific” where their work in the Pacific, particularly the proposed Digital Earth Pacific, was outlined. This initiative involves the development of a datacube for the Pacific islands and SPC is interested in developing partnerships to implement this project. The Digital Earth Pacific initiative proposes to offer earth observation solutions relating to climate change, coastal resources and change, coral bleaching, maritime surveillance, marine water quality, agriculture, water and vegetation.
46. Mr. Einar Bjorgo, of UNITAR/UNOSAT provided an overview of their work in Asia-Pacific, including their capacity building efforts and the provision and analysis of geospatial data, particularly for disasters. A new AI-based Flood Rapid Mapping Service was also presented, along with PulseSatellite, which is a collaborative web-based tool that combines cutting edge artificial intelligence with human expertise to extract the most relevant information from satellite imagery for use in humanitarian contexts.
47. Mr. Satoshi Kogure of Multi-GNSS Asia (MGA) presented their work on knowledge sharing, capacity building and infrastructure sharing or development relating to GNSS needs. Among these activities, MGA is facilitating the support of interested partners to test the GNSS signals in their area. MGA noted that they signed an MOU with ESCAP in 2019 with a view to expand their activities on achieving the SDGs and reducing disaster

risk. They are planning to organize a series of online workshops on “Solutions for Disaster Management: Tsunami/Flooding” in partnership with GISTDA, ESCAP and the Cabinet Office of Japan. Anyone interested in the lectures were invited to register online.

48. Mr. Peeranan Towashiraporn from the Asia Disaster Preparedness Centre (ADPC) made a statement on their work in South-East Asia, which covers projects/programmes on the strategic themes of risk governance, urban resilience, climate resilience, health risk management, preparedness for response and resilient recovery. Mr. Towashiraporn further detailed their progress with their flagship SERVIR-Mekong programme which has helped countries in the lower Mekong region in enhancing the use of earth observation and geospatial data for improved decision-making.

J. Other matters

49. No other matters were raised during the meeting.

K. Adoption of the report

50. The Chair presented the conclusions and recommendations of the meeting for discussion. These were then adopted by the Committee on 18 August 2020.
51. The Committee adopted the proceedings, conclusions and recommendations, as contained in the present report and concluded its twenty-fourth session on 18 August 2020. Comments received by the ICC participants by 21 September 2020 were incorporated and this final version is considered reviewed and approved by all ICC members.

List of Annex Documents

Annex 1 Agenda of the meeting
Annex 2 List of Participants
Annex 3 Results of survey on needs and contributions



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18 August 2020
English only

For Participants only

Economic and Social Commission for Asia and the Pacific
Intergovernmental Consultative Committee on the
Regional Space Applications Programme for Sustainable Development

Twenty-fourth session
18-19 August 2020
Video Conference via MS Teams

Tentative Programme
(as of 18 August 2020)

TUESDAY, 18 August 2020 (10:30 - 15:30 hrs. Bangkok time)

10:00-10:25 hrs. (UTC+7)		Preparation - Pre-arrangement for MS Teams application testing and PPT check
10:30-10:35 hrs.	Item 1	Opening session - Welcome remarks by Ms. Tiziana Bonapace Director, Information and Communications Technology and Disaster Risk Reduction Division (IDD), ESCAP
10:35-10:45 hrs.	Item 2	Election of officers - Elect two co-chairs
10:45-10:55 hrs.	Item 3	Adoption of the agenda
10:55-11:05 hrs.	Item 4	Reconfirmation of the membership of ICC - Self-introduction of participants
11:05-11:20 hrs.	Item 5	Progress report on implementation of the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018 - 2030) - Mr. Keran Wang, Chief, Space Applications Section (SAS), IDD, ESCAP (10 minutes) Q&A (5 minutes)

11:20-11:35 hrs.	Item 6	<p>Survey on needs and contributions to the implementation of the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018 – 2030), Phase I (2018-2022)</p> <ul style="list-style-type: none"> - Ms. Kelly Hayden, Economic Affairs Officer, SAS, IDD, ESCAP (10 minutes) <p>Q&A (5 minutes)</p>
11:35-11:50 hrs.	Item 7	<p>ESCAP publication “Geospatial information applications for sustainable development in Asia and the Pacific”</p> <ul style="list-style-type: none"> - Ms. Juliet Nicole Braslow, Associate Economic Affairs Officer, SAS, IDD, ESCAP (10 minutes) <p>Q&A (5 minutes)</p>
11:50-15:00 hrs. (10 min. each)	Item 8	<p>Country Presentation: Achievements and future plans on implementation of the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018 – 2030)</p> <p>Presentation sequence by alphabetical order</p> <ul style="list-style-type: none"> • Thailand • Armenia • Bangladesh • Bhutan • Cambodia • China • India • Indonesia • Iran (Islamic Republic of) • Myanmar • Nepal • Philippines • Hong Kong, China
15:00-15:20 hrs. (3 min. each)	Item 9	<p>Partner Organizations Presentation: Achievements and future plans on implementation of the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018 – 2030)</p> <ul style="list-style-type: none"> - Special invited report: Introduction to Geostationary Environment Monitoring Spectrometer (GEMS) and Pandora Asia Network (PAN) by Mr. Limseok Chang, NIER (10 min.) - Advancing Diverse Links Towards a New Space Era by Mr. Akira Kosaka, APRSAF

		<ul style="list-style-type: none"> - Capacity Building in Asia Pacific Region by Mr. Prakash Chauhan, CSSTEAP - Big Earth Data for Sustainable Development in the Pacific by Mr. Andrew Jones, SPC - UNITAR-UNOSAT contribution to the implementation of Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018-2030) by Mr. Einar Bjorgo, UNITAR/UNOSAT - MGA's activities and collaboration with UN ESCAP by Mr. Satoshi Kogure, MGA - ADPC statement by Mr. Peeranan Towashiraporn, ADPC
15:20-15:30 hrs.	Item 10	<ul style="list-style-type: none"> - Summary by Secretariat - Closing remarks by ICC Co-Chair <p><i>(The Co-Chairs will make announcement in case that presentation and deliberation need to be continued on 19 August)</i></p>

WEDNESDAY, 19 August 2020

09:00-09:30 hrs. (UTC+7)		Opening Session of the 3rd Session of the Committee on ICT and STI (CICTSTI-3) <ul style="list-style-type: none"> - Using KUDO applications (virtual meeting) (ICC members are encouraged to contact their Seat of Government to join the country delegation to CICTSTI-3, the Letter of Credential should be sent to ESCAP)
		Break
15:00-17:00 hrs.		CICTSTI-3 Item 4: Scaling up the use of space applications to deliver the Sustainable Development Goals <ul style="list-style-type: none"> - Presentations by IDD, ESCAP - Country Statements by member States of ESCAP



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Intergovernmental Consultative Committee on the
Regional Space Applications Programme for Sustainable Development
Twenty-fourth session
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LIST OF PARTICIPANTS

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Mr. David Hudson, Manager, Asia-Pacific Relations Place, Space and Communities Division, Geoscience Australia, Canberra

BANGLADESH

Mr. Mizanur Rahman, Chairman, Bangladesh Space Research and Remote Sensing Organization, Dhaka

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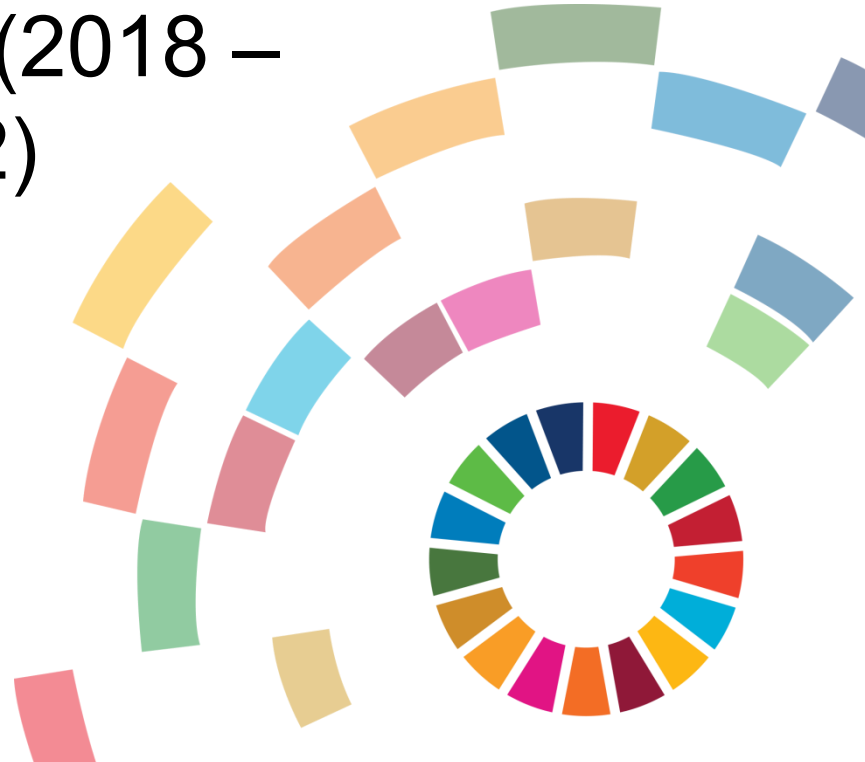
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Survey on needs and contributions to the implementation of the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018 – 2030), Phase I (2018-2022)

Annex 3
E/ESCAP/ICC(24)/3

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Economic Affairs Officer
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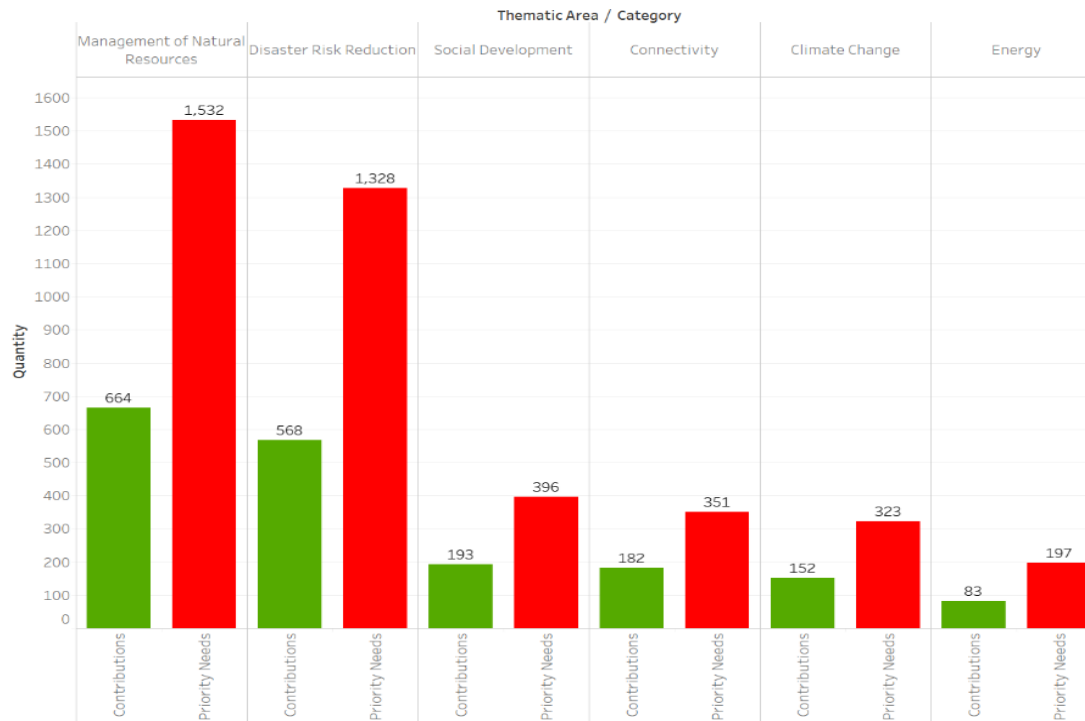


Introduction to the survey

- Circulated in 2019, with the last submission recorded in October.
- Purpose to identify priorities for the Plan of Action, and possible support that countries and organizations can provide.
- 17 responses – 16 from member and associate member States, 1 from an international organization.
- Central Asia – 2; Pacific – 2; SEA – 4; South Asia – 5; E&NE Asia - 3



Number of requests for support by thematic area



Many of the needs requested could also be supported by others in the region

Figure 2. Total priority needs matched to contributions by thematic area

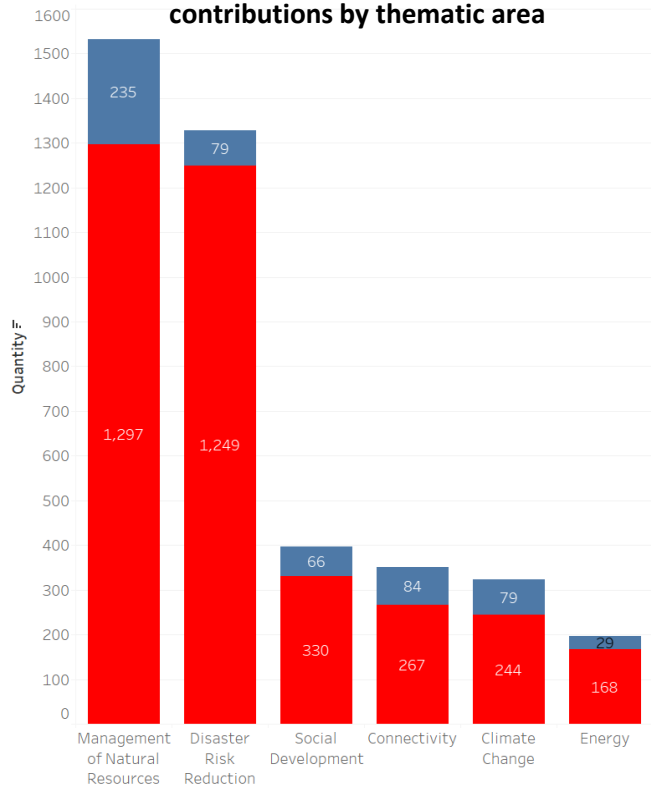
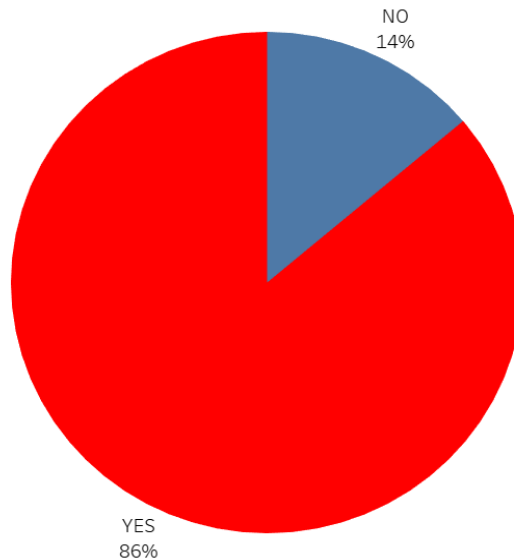


Figure 3. Total priority needs matched to contributions proposed from countries



Rank	Action Name	Thematic Area	Action Area
1	Share good practices from the health sector, and work with existing intergovernmental mechanisms, international and regional organizations and relevant implementing agencies that could benefit from the use of geo-information science.	Social Development	AA3
2	Develop capacity for mapping and modelling urban and peri-urban areas and settlements.	Management of Natural Resources	AA2
3	Develop capacity to map health risk hotspots using geospatial information and big data.	Social Development	AA2
4	Develop capacity in integrating and utilizing space and geo-informatics applications with new methods, tools and technologies, from other digital innovations, for the mapping process.	Disaster Risk Reduction	AA2
5	Research opportunities for including Global Satellite Navigation System for infrastructure and utilities mapping, relevant to disaster damage assessment and early warning systems.	Disaster Risk Reduction	AA1
6	Provide technical support on how to integrate, enhance and strengthen multi-hazard monitoring and early warning systems and real-time situational analysis for rapid-onset disasters, including flash floods from high-altitude lake and glacial outbursts, as well as slow-onset disasters, including drought and sand and dust storms.	Disaster Risk Reduction	AA2
7	Promote the use of geospatial information management systems, global navigation satellite systems and communications satellite systems towards disaster risk reduction and management at the policy level.	Disaster Risk Reduction	AA3
8	Identify interfaces between, and integration of, traditional space-based information and frontier technologies to address disaster risk management and build resilience.	Disaster Risk Reduction	AA1
9	Develop community-based hazard maps to raise awareness on preparedness and mitigation.	Social Development	AA2
10	Carry out risk mapping of highly vulnerable areas and communities by identifying hazards, vulnerabilities and exposure to risks.	Disaster Risk Reduction	AA2



**Top
20
needs**

Priorities are
health, urban
development
and disaster
risk reduction

Rank	Action Name	Thematic Area	Action Area
1	Share good practices from the health sector, and work with existing intergovernmental mechanisms, international and regional organizations and relevant implementing agencies that could benefit from the use of geo-information science.	Social Development	AA3
2	Develop capacity for mapping and modelling urban and peri-urban areas and settlements.	Management of Natural Resources	AA2
3	Develop capacity to map health risk hotspots using geospatial information and big data.	Social Development	AA2
4	Develop capacity in integrating and utilizing space and geo-informatics applications with new methods, tools and technologies, from other digital innovations, for the mapping process.	Disaster Risk Reduction	AA2
5	Research opportunities for including Global Satellite Navigation System for infrastructure and utilities mapping, relevant to disaster damage assessment and early warning systems.	Disaster Risk Reduction	AA1
6	Provide technical support on how to integrate, enhance and strengthen multi-hazard monitoring and early warning systems and real-time situational analysis for rapid-onset disasters, including flash floods from high-altitude lake and glacial outbursts, as well as slow-onset disasters, including drought and sand and dust storms.	Disaster Risk Reduction	AA2
7	Promote the use of geospatial information management systems, global navigation satellite systems and communications satellite systems towards disaster risk reduction and management at the policy level.	Disaster Risk Reduction	AA3
8	Identify interfaces between, and integration of, traditional space-based information and frontier technologies to address disaster risk management and build resilience.	Disaster Risk Reduction	AA1
9	Develop community-based hazard maps to raise awareness on preparedness and mitigation.	Social Development	AA2
10	Carry out risk mapping of highly vulnerable areas and communities by identifying hazards, vulnerabilities and exposure to risks.	Disaster Risk Reduction	AA2

Submissions
were in 2019

Top 20 needs

Other priority
needs include
forestry, land
degradation,
and climate
change

Rank	Action Name	Thematic Area	Action Area
11	Provide support to mitigate the effects of disasters occurring in Asia and the Pacific through the International Charter on Space and Major Disasters.	Disaster Risk Reduction	AA3
12	Integrate ground-based and satellite systems for effective monitoring of hazards, disasters and critical infrastructure using global navigation satellite systems.	Disaster Risk Reduction	AA2
13	Develop capacity in terms of seasonal forecasting and its impact on agriculture.	Disaster Risk Reduction	AA2
14	Strengthen the capacity of countries to use satellite data for agroecosystem resilience, including analysing geospatial data for multi-hazard early warning and damage assessment, such as for flood, drought and cyclone/typhoon/hurricane.	Disaster Risk Reduction	AA2
15	Provide technical support, including satellite data, tools and knowledge, to monitor forest dynamics and to aid in forest management.	Management of Natural Resources	AA2
16	Provide technical support to develop capacity to identify land degradation and desertification	Management of Natural Resources	AA2
17	Provide technical support on monitoring and measuring greenhouse gas emissions and absorption.	Climate Change	AA2
18	Provide support and access to pre-, during-and post-disaster satellite data to vulnerable and affected countries for damage assessment.	Disaster Risk Reduction	AA2
19	Discuss and promote the potential concept of a common regional information technology system to support activities related to space applications for sustainable development.	Disaster Risk Reduction	AA3
20	Develop capacity for using space applications for climate modelling and scenario development, including impact and vulnerability mapping, through existing programmes.	Climate Change	AA2

Top 5 for disaster risk reduction

Rank	Action Name	Action Area
1	Develop capacity in integrating and utilizing space and geo-informatics applications with new methods, tools and technologies , from other digital innovations, for the mapping process.	AA2
2	Research opportunities for including Global Satellite Navigation System for infrastructure and utilities mapping , relevant to disaster damage assessment and early warning systems.	AA1
3	Provide technical support on how to integrate, enhance and strengthen multi-hazard monitoring and early warning systems and real-time situational analysis for rapid-onset disasters, including flash floods from high-altitude lake and glacial outbursts, as well as slow-onset disasters, including drought and sand and dust storms.	AA2
4	Promote the use of geospatial information management systems, global navigation satellite systems and communications satellite systems towards disaster risk reduction and management at the policy level .	AA3
5	Identify interfaces between , and integration of, traditional space-based information and frontier technologies to address disaster risk management and build resilience.	AA1

Japan offered to share disaster related products / information through Sentinel Asia

Bhutan requested data sharing for this

Offers of contributions for DRR


#1 priority need

Action Name	Action Item	Contributing Country
Develop capacity in integrating and utilizing space and geoinformatics applications with new methods, tools and technologies, from other digital innovations, for the mapping process.	Assessment / management	Sri Lanka
	Awareness workshops towards available geospatial data and information	Sri Lanka
	Dissemination of space-based information to disaster managers	India
		Pakistan
	Flood and drought hazard assessment and monitoring.	Pakistan
	Geospatial training (GIS, RS, GNSS)	Tajikistan
		China
	Install and operationalize sector specific tools and systems	Indonesia
	Rapid damage assessment in the event of flood.	Pakistan
	Sharing tools and data repository	China
	Technical support	Indonesia
		China
		Tajikistan
		Sri Lanka
		Philippines
		Pakistan
		India
	Training and capacity building	ADRC
		Tajikistan
		Philippines
		Indonesia
		ADRC



Top 5 for natural resource management

Rank	Action Name	Action Area
1	Develop capacity for mapping and modelling urban and peri-urban areas and settlements.	AA2
2	Provide technical support to develop capacity to identify land degradation and desertification	AA2
3	Provide technical support , including satellite data, tools and knowledge, to monitor forest dynamics and to aid in forest management.	AA2
4	Develop capacity to assess deforestation and forest changes over time using satellite data.	AA2
5	Provide technical support and develop capacity on monitoring land use change across all terrestrial ecosystems.	AA2



Japan offered to provide available open data access by GCOM-C/W on JAXA home page and share the knowledge of APRSAF space application working group

Contributions for top 2 NRM needs

Action Name	Action Item	Country
Develop capacity for mapping and modelling urban and peri-urban areas and settlements.	Geospatial training (GIS, RS, GNSS)	Philippines
		China
	Install and operationalize sector specific tools and systems	India
	Sharing tools and data repository	Thailand
		Tajikistan
		China
	Technical support	China
	Training and capacity building	Tajikistan
		India
		Tajikistan
Provide technical support to develop capacity to identify land degradation and desertification	Awareness workshops towards available geospatial data and information	Tajikistan
	Geospatial training (GIS, RS, GNSS)	Philippines
		China
	Install and operationalize sector specific tools and systems	Tajikistan
		Indonesia
	Share the knowledge of APRSAF space application working group	Japan
	Sharing tools and data repository	India
		China
	Technical support	China
	Training and capacity building	Tajikistan
		Indonesia



Top 5 for connectivity

Rank	Action Name	Action Area
1	Research the integration of satellite data and global navigation satellite systems with ground information and other sources of data, to identify traffic conditions, hazardous areas and driving behaviours.	AA1
2	Develop capacity to monitor ground, air and marine transport using space applications and other data and information.	AA2
3	Promote ongoing research in space, applications for sustainable development, through scholarships and research grants , and share knowledge on relevant innovative research.	AA1
4	Continue to provide capacity development opportunities through scholarships, exchange programmes and remotely through massive open online courses , to support the use of space applications for sustainable development.	AA2
5	Research how space applications, information and communications technology and frontier technologies can support the development of smart and safe transport and logistics services and systems.	AA1

Sri Lanka requested the development of a data repository

Bhutan requested knowledge expansion


Contributions for top 2 Connectivity needs

Action Name	Action Item	Contributing Country
Research the integration of satellite data and global navigation satellite systems with ground information and other sources of data, to identify traffic conditions, hazardous areas and driving behaviours.	Develop data repository	Thailand
		Tajikistan
		Philippines
		China
	Develop guidelines/ manuals/ handbooks	Thailand
		Tajikistan
	Expand existing knowledge	Tajikistan
		China
	Identify and list good practices	Thailand
	Identify areas of training and capacity building	China
Develop capacity to monitor ground, air and marine transport using space applications and other data and information.	Assessment / management	Research at institution level (collaborative and individual)
		Thailand
		Philippines
		China
		Tajikistan
		Philippines
	Geospatial training (GIS, RS, GNSS)	China
		Tajikistan
	Install and operationalize sector specific tools and systems	Tajikistan
		Tajikistan
	Sharing tools and data repository	Tajikistan
		China
	Technical support	Tajikistan
		China



Top 5 for social development

Rank	Action Name	Action Area
1	Share good practices from the health sector, and work with existing intergovernmental mechanisms, international and regional organizations and relevant implementing agencies that could benefit from the use of geo-information science.	AA3
2	Develop capacity to map health risk hotspots using geospatial information and big data.	AA2
3	Develop community-based hazard maps to raise awareness on preparedness and mitigation.	AA2
4	Research methodologies on how to utilize space applications to identify and distinguish socioeconomic development , e.g., poverty mapping, satellite data for night lights.	AA1
5	Economic mapping to understand the impacts of climate-related events on the socioeconomic conditions of vulnerable groups.	AA1



Sharing good practices relating to covid-19 is a priority for all countries

Contributions for top 2 social development needs

Action Name	Action Item	Contributing Country
Share good practices from the health sector, and work with existing intergovernmental mechanisms, international and regional organizations and relevant implementing agencies that could benefit from the use of geo-information science.	Consultation on decision making	Pakistan
	Cooperation on data sharing	Tajikistan
		Pakistan
		China
		Philippines
		Tajikistan
	Promote institutional cooperation at regional, national and international levels	China
	Promote IT and space applications for sustainable development	Pakistan
		Tajikistan
		Philippines
Develop capacity to map health risk hotspots using geospatial information and big data.	Provide good practices on satellite mapping products/ geospatial data	China
	Geospatial training (GIS, RS, GNSS)	China
	Sharing tools and data repository	Tajikistan
		Philippines
		Pakistan
		China
	Technical support	China
	Training and capacity building	Tajikistan



Top 5 for energy

Rank	Action Name	Action Area
1	Research and map the renewable energy potential using space applications.	AA1
2	Research the use of space applications for energy infrastructure site selection including wind, wave and solar infrastructure.	AA1
3	Share good practices and facilitate cooperation on how space applications can support the development of standards and methodologies for the identification of renewable energy potential.	AA1
4	Research the integration and use of space applications with other sources of data to determine energy demand and consumption .	AA1
5	Develop capacity to use space applications for identification and mapping of renewable energy potential , such as hydropower and geothermal and solar energy.	AA2



Thailand requested greater institutional cooperation at regional, national and international levels

Contributions for top 2 energy needs

Action Name	Action Item	Contributing Country
Research and map the renewable energy potential using space applications.	Develop data repository	Thailand
	Develop guidelines/ manuals/ handbooks	Tajikistan
		India
		Thailand
	Develop tools and systems	Tajikistan
	Expand existing knowledge	Hong Kong, China
		China
		Tajikistan
	Identify and list good practices	India
	Identify areas of training and capacity building	China
		Thailand
	Research at institution level (collaborative and individual)	Philippines
Hong Kong, China		
China		
Share good practices and facilitate cooperation on how space applications can support the development of standards and methodologies for the identification of renewable energy potential.	Cooperation on data sharing	Tajikistan
		China
	Promote institutional cooperation at regional, national and international levels	Tajikistan
		China
		Philippines
	Promote IT and space applications for sustainable development	Philippines
	Provide good practices on satellite mapping products/ geospatial data	Tajikistan
		China



Top 5 for climate change

Rank	Action Name	Action Area
1	Develop capacity for using space applications for climate modelling and scenario development , including impact and vulnerability mapping, through existing programmes.	AA2
2	Provide technical support on monitoring and measuring greenhouse gas emissions and absorption .	AA2
3	Research on measuring greenhouse gas concentration from meteorological and Earth observation, using greenhouse gas observation satellites.	AA1
4	Promote the use of evidence-based information to support decision-making on the effects of climate change.	AA3
5	Support existing intergovernmental mechanisms , and international and regional organizations, and their relevant programmes on the use of space applications for adaptation and mitigation of climate change through the sharing of good practices .	AA3



Sri Lanka requested the development of tools and systems



Contributions for top 2 climate change needs

Action Name	Action Item	Contributing Country
Develop capacity for using space applications for climate modelling and scenario development, including impact and vulnerability mapping, through existing programmes.	Adapted RCP 2.6 using RegCM4 to project climate change up to 2030.	Pakistan
	Assessment / management	Thailand
		Tajikistan
		Philippines
		Pakistan
		China
		Armenia
	Awareness workshops towards available geospatial data and information	Thailand
		Tajikistan
	Data collection/Data repository	Pakistan
	Geospatial training (GIS, RS, GNSS)	Philippines
		China
Provide technical support on monitoring and measuring greenhouse gas emissions and absorption.	Sharing tools and data repository	Tajikistan
		China
	Technical support	China
		Armenia
	Assessment / management	Thailand
	Awareness workshops towards available geospatial data and information	Thailand
		Tajikistan
		India
	Geospatial training (GIS, RS, GNSS)	Philippines
		China
	Sharing tools and data repository	Tajikistan
		China
		Armenia
	Technical support	China
	Training and capacity building	Sri Lanka



Matters for consideration

- The continued provision of good practices for future publications on space applications in Asia-Pacific;
- The completion of the needs and contributions survey for member States, associate members and other organizations that have not yet submitted one;
- The continued collection of information on the use of space applications and geospatial information for the health sector, and for other issues of urgent need as they arise;



Matters for consideration

- Develop or facilitate the participation of member States in various capacity building programmes for specific thematic priority areas;
- The continuation of the activities relating to resilient agriculture such as drought and crop monitoring;
- Engaging other agencies, partners or member States to contribute to the implementation of specific activities under the Plan of Action and reporting back to the ICC or through other mechanisms; and
- Are the top 20 priority actions identified in the document the most appropriate focus for Phase I of the Plan of Action?



THANK YOU

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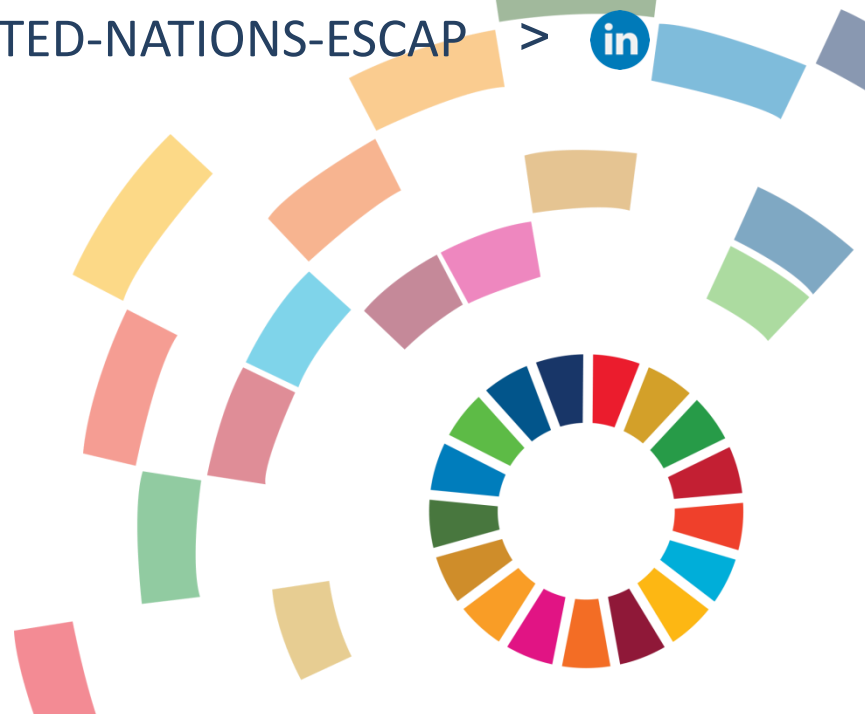
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@UNITED-NATIONS-ESCAP



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Rank	Action Name	Thematic Area	Action Area
1	Share good practices from the health sector, and work with existing intergovernmental mechanisms, international and regional organizations and relevant implementing agencies that could benefit from the use of geo-information science.	Social Development	AA3
2	Develop capacity for mapping and modelling urban and peri-urban areas and settlements.	Management of Natural Resources	AA2
3	Develop capacity to map health risk hotspots using geospatial information and big data.	Social Development	AA2
4	Develop capacity in integrating and utilizing space and geo-informatics applications with new methods, tools and technologies, from other digital innovations, for the mapping process.	Disaster Risk Reduction	AA2
5	Research opportunities for including Global Satellite Navigation System for infrastructure and utilities mapping, relevant to disaster damage assessment and early warning systems.	Disaster Risk Reduction	AA1
6	Provide technical support on how to integrate, enhance and strengthen multi-hazard monitoring and early warning systems and real-time situational analysis for rapid-onset disasters, including flash floods from high-altitude lake and glacial outbursts, as well as slow-onset disasters, including drought and sand and dust storms.	Disaster Risk Reduction	AA2
7	Promote the use of geospatial information management systems, global navigation satellite systems and communications satellite systems towards disaster risk reduction and management at the policy level.	Disaster Risk Reduction	AA3
8	Identify interfaces between, and integration of, traditional space-based information and frontier technologies to address disaster risk management and build resilience.	Disaster Risk Reduction	AA1
9	Develop community-based hazard maps to raise awareness on preparedness and mitigation.	Social Development	AA2
10	Carry out risk mapping of highly vulnerable areas and communities by identifying hazards, vulnerabilities and exposure to risks.	Disaster Risk Reduction	AA2



**Top
20
needs**

**Priorities are
health, urban
development
and disaster
risk reduction**

Top 20 needs

Other priority needs include forestry, land degradation, and climate change

Rank	Action Name	Thematic Area	Action Area
11	Provide support to mitigate the effects of disasters occurring in Asia and the Pacific through the International Charter on Space and Major Disasters.	Disaster Risk Reduction	AA3
12	Integrate ground-based and satellite systems for effective monitoring of hazards, disasters and critical infrastructure using global navigation satellite systems.	Disaster Risk Reduction	AA2
13	Develop capacity in terms of seasonal forecasting and its impact on agriculture.	Disaster Risk Reduction	AA2
14	Strengthen the capacity of countries to use satellite data for agroecosystem resilience, including analysing geospatial data for multi-hazard early warning and damage assessment, such as for flood, drought and cyclone/typhoon/hurricane.	Disaster Risk Reduction	AA2
15	Provide technical support, including satellite data, tools and knowledge, to monitor forest dynamics and to aid in forest management.	Management of Natural Resources	AA2
16	Provide technical support to develop capacity to identify land degradation and desertification	Management of Natural Resources	AA2
17	Provide technical support on monitoring and measuring greenhouse gas emissions and absorption.	Climate Change	AA2
18	Provide support and access to pre-, during-and post-disaster satellite data to vulnerable and affected countries for damage assessment.	Disaster Risk Reduction	AA2
19	Discuss and promote the potential concept of a common regional information technology system to support activities related to space applications for sustainable development.	Disaster Risk Reduction	AA3
20	Develop capacity for using space applications for climate modelling and scenario development, including impact and vulnerability mapping, through existing programmes.	Climate Change	AA2