Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018–2030)

Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018–2030)

UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

Preface

On 10 October 2018, Ministers and the heads of the space community from over 30 countries in Asia-Pacific met in Bangkok for the Third Ministerial Conference on Space Applications for Sustainable Development in Asia and the Pacific.

The Ministerial Conference adopted two documents, that will guide work in Asia-Pacific for the next decade: 1) the Ministerial Declaration on Space Applications for Sustainable Development in Asia and the Pacific, and 2) the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018 – 2030).

The Plan of Action is a regionally-coordinated, inclusive and needs-driven blueprint that harnesses space and geospatial applications, as well as digital innovations to support countries, particularly those with special needs, to achieve the 2030 Agenda. It is developed as a follow-up to the Asia-Pacific Plan of Action for Applications of Space Technology and Geographic Information Systems for Disaster Risk Reduction and Sustainable Development, 2012–2017. It maps the sectoral needs and resources at national and regional levels. It also promotes multi-sectoral coordination on a voluntary basis, in line with each country's national circumstances and development priorities.

The Plan of Action is fully aligned with ESCAP's Regional Roadmap for Implementing the 2030 Agenda for Sustainable Development in Asia and the Pacific. It includes 188 actions in the following thematic areas: (a) disaster risk management; (b) natural resource management; (c) connectivity; (d) social development; (e) energy; and (f) climate change. All 188 actions will significantly contribute to 37 Targets of 14 Goals of the 2030 Agenda for Sustainable Development.

The implementation modalities are through: (a) research and knowledge-sharing; (b) capacity-building and technical support; and (c) intergovernmental discussions and regional practices. Among the three, capacity-building and technical support has been identified by countries as the priority. The Plan is divided into three implementation phases, each of a four-year duration, with a Ministerial Conference to be convened at the end of each phase.

Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018–2030)

I.   Introduction

1.   Asia and the Pacific has become a hub of digital and science innovation that brings new and innovative solutions to pressing global problems. Faster and more versatile digital connectivity, satellite data, geographic information systems and spatial analysis have become increasingly accessible and available, generating more evidence-based data to support real-time decision-making. Geospatial information has also increasingly been incorporated into development planning, which has led to more accurate monitoring and evaluation of development interventions. As a result, geospatial information applications have come to play a more prominent role in the implementation and realization of the 2030 Agenda for Sustainable Development, with a particular focus on disaster risk reduction.

2.   Despite these advances, several challenges remain. A lack of capacity and resources in terms of finance and expertise, is a common problem. Many developing countries, including small island developing States, do not have the capacity to utilize, analyse and interpret space-derived data.

3.   Through the long-standing framework of the Regional Space Applications Programme for Sustainable Development, the Economic and Social Commission for Asia and the Pacific (ESCAP) has brought together space agencies and relevant stakeholders to address these challenges. Pursuant to resolution 69/11, the Commission endorsed the Asia-Pacific Plan of Action for Applications of Space Technology and Geographic Information Systems for Disaster Risk Reduction and Sustainable Development, 2012–2017. Concurrently, the Commission, through resolution 71/11, established the Asian and Pacific Centre for the Development of Disaster Information Management as a regional institution of the Commission, which will contribute to the Commission's programme of work in the area of information and communications technology and disaster risk reduction.

4.   The Plan has been developed in an inclusive, collective way, driven by country needs. Actions are not designed for one entity to implement alone, rather they serve to stimulate regional action. The Plan provides both a consolidated needs assessment for countries in the region that wish to utilize space applications for sustainable development and a guide for partners that wish to support those countries in meeting the needs.

5.   The Plan comprises two parts. First, the main body of the text identifies guiding principles, relevant mandates, modalities including activities cutting across all thematic areas, and means of implementation. Second, an appendix contains specific actions identified under each thematic area. As the Plan covers a long implementation period until 2030, the Intergovernmental Consultative Committee, at its twenty-second session, also recognized the need to periodically review and amend the Plan, to reflect the evolving needs of countries, emerging technologies, shifting priorities and unforeseen challenges arising in the region. The Plan also foresees enhanced partnerships, at the regional level, between existing Regional Space Applications Programme for Sustainable Development members, intergovernmental mechanisms and international and technical organizations.

Relevant mandates and sequential development of the Plan

6.   The 2030 Agenda for Sustainable Development, the Sendai Framework for Disaster Risk Reduction 2015–2030 and the Paris Agreement collectively contribute to a sustainable development agenda, which will play an important role in shaping the world for generations to come. Space-derived data and information are essential and accessibility will be useful for its implementation, monitoring and realization.

7.   The Regional Space Applications Programme for Sustainable Development was created in 1994 at the First Ministerial Conference on Space Applications for Development in Asia and the Pacific held in Beijing. The second phase of the Regional Space Applications Programme for Sustainable Development was launched after the Second Ministerial Conference on Space Applications for Sustainable Development in Asia and the Pacific held in New Delhi in 1999.

8.   In December 2012, members and associate members of ESCAP, attending 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, adopted the Plan of Action for the period 2012–2017.[1]

9.   At the twentieth session of the Intergovernmental Consultative Committee held in New Delhi from 31 October to 1 November 2016, members and associate members requested that the new Plan should reflect the emerging needs specific to the region and subregions, taking into account several previous ESCAP resolutions covering disaster risk management, connectivity, the 2030 Agenda and the needs of small island developing States.[2]

10.   The Asia-Pacific Space Leaders Forum, which was held in New Delhi on 2 November 2016, highlighted the role of space applications in the implementation of the Sustainable Development Goals and requested the secretariat to work with members and associate members in the preparation of a new plan for adoption at the Third Ministerial Conference on Space Applications for Sustainable Development in Asia and the Pacific.

11.   Consequently, the Intergovernmental Consultative Committee on the Regional Space Applications Programme for Sustainable Development at its twenty-first session, held in Bangkok in October 2017, agreed on the vision for the plan that, by 2030, all countries in the Asia-Pacific region would be able to access and use space science, technology and their applications to the fullest extent to meet their individual and regional needs for achieving the Sustainable Development Goals.[3]

12.   At its first meeting, held in late May 2018, the Drafting Committee for the Plan prioritized 48 Goal targets to which space applications could most significantly contribute to the priority thematic areas outlined in the regional road map for implementing the 2030 Agenda for Sustainable Development in Asia and the Pacific.

---

[1]   See E/ESCAP/SASD/3/Rev.1.

[2]   E/ESCAP/ICC(21)/4. Available at www.unescap.org/sites/default/files/E_ESCAP_ICC(21)_4_Draft%20outline%20of %20AsiaPacificPlanofAction%202018-2030.pdf.

[3]   See E/ESCAP/ICC(21)/9. Available at www.unescap.org/sites/default/files/E_ESCAP_ICC%2821%29_9_SummaryReport_REV.pdf.

13.   In June 2018, the United Nations convened the UNISPACE+50 high-level segment and high-level symposium, which focused on space as a driver of sustainable development. It was held in Vienna in commemoration of the fiftieth anniversary of the first United Nations Conference on the Exploration and Peaceful Uses of Outer Space and marked a significant step towards chartering a comprehensive "Space2030" agenda. UNISPACE+50 encouraged all States to continue to promote and actively contribute to strengthening international cooperation in the peaceful use of outer space and facilitating the realization of the Sustainable Development Goals, considering the needs of developing countries.

14.   At the Intergovernmental Consultative Committee at its twenty-second session, held in Bangkok in August 2018, participants endorsed the activities in the priority thematic areas based on the regional road map which can support the work towards attaining many Sustainable Development Goals. Committee members also provided concrete actions that can be associated with those targets, specifically: (a) research and knowledge-sharing; (b) capacity-building and technical support; and (c) intergovernmental discussions and regional practices.

15.   The draft plan was submitted at the request of an ad-hoc session of the Intergovernmental Consultative Committee (ICC Plus), by the Chairman, to the Third Ministerial Conference on Space Applications for Sustainable Development, which endorsed the draft plan and recommended that it be endorsed by the Commission at its seventy-fifth session.

II.   Modalities and means of implementation

16.   The Plan has three aims. First, it includes activities at the international, regional and national levels, focusing on the six priority areas identified in the regional road map. Second, the Plan identifies the means and modes of implementation. Third, it promotes partnership and collaboration between member States, United Nations agencies, intergovernmental mechanisms, and international and technical organizations in the implementation of the Plan of Action.

Overview of the Asia-Pacific Plan of Action on Space Applications for Sustainable Development

Vision

Member States in the Asia-Pacific region can access, use and develop space science, technology and its applications to the fullest extent at the national and regional levels to achieve the goals set out in the 2030 Agenda for Sustainable Development.

Mission

Member States of the Economic and Social Commission for Asia and the Pacific and the Regional Space Applications Programme for Sustainable Development network to implement the Regional Space Applications Programme as the Asia-Pacific regional framework for the coordination and strengthening of regional space cooperation in support of the regional road map for implementing the 2030 Agenda for Sustainable Development in Asia and the Pacific.

Six priority themes and three targeted actions were identified to implement the Plan of Action.[4]

Review of implementation

Phase I: 2018–2022

Phase II: 2022–2026

Phase III: 2026–2030

Actions in priority themes

17.   Actions were identified under specific themes (appendix). The following sections summarize these actions in general:

(a)   Disaster risk reduction and resilience

18.   Commission resolution 71/12 invited members and associate members, in coordination with relevant international organizations, the private sector and civil society, as appropriate, to attach priority on promoting information and communications technology and space applications for effective disaster risk management to support the implementation of the Sendai Framework in Asia and the Pacific.

19.   The Sendai Framework highlights the use of space applications, including geographic information systems, to enhance measurement tools, data collection, data analyses and dissemination of data.[5] To reduce disaster risk and build greater resiliency among communities and regions, the Plan of Action seeks to strengthen the integration of digital innovation with space applications for disaster risk reduction, multi-hazard monitoring and early warning, damage assessment and emergency response and recovery, by enhancing regional cooperation. These actions will contribute to the implementation of Sustainable Development Goals 2 (Zero hunger) and 13 (Climate action) and are in line with the Sendai Framework, which sets global common standards and targets for disaster risk reduction. Disaster risk reduction is incorporated in 25 targets in 10 of the 17 Sustainable Development Goals.[6]

(b)   Management of natural resources

20.   Improving natural resource management and protection of ecosystems is one of the priorities in the regional road map. Space applications can offer valuable information to support conservation and sustainable resource management. The proposed actions will support implementing Goals 6 (Water and sanitation), 9 (Industry, innovation and infrastructure), 11 (Sustainable cities and communities), 12 (Responsible consumption and production), 14 (Life under water) and 15 (Life on land), among others. Many activities have cross-cutting benefits to other sectors such as water use, sustainable marine and coastal ecosystems, forests resources, urban planning, land degradation and desertification.

(c)   Connectivity for the 2030 Agenda for Sustainable Development

21.   Seamless connectivity across transport, information and communications technology, and trade sectors is a key theme highlighted in

---

[4]   A matrix of actions for thematic areas is contained in the appendix.

[5]   General Assembly resolution 69/283.

[6]   Ibid.

the ESCAP report *Enhancing Regional Economic Cooperation and Integration in Asia and the Pacific*. The commitment to integration, regional cooperation, and connectivity was highlighted in the regional road map. The proposed actions in this thematic area, which can be supported by the use of geospatial information and tools, include creating more capacity development opportunities, access to the Internet with low-cost information and communications technology for poorer communities, building smart transport systems, facilitating study on cross-border immigrant and internal disaster displacement, will contribute to the implementation of Goals 3 (Good health and well-being), 4 (Quality education), 9 (Industry, innovation and infrastructure), 10 (Reduce inequalities) and 11 (Sustainable cities and communities).

(d)   Social development

22.   Social development is a cross-cutting issue for many Sustainable Development Goals and focuses on ameliorating disparities in income and wealth across all communities. The proposed actions in this area that focus on using Earth observation in support of mapping poverty and vulnerable groups, identifying health risk hotspots, monitoring and cleaning up pollution and contamination will contribute to the implementation of Goals 1 (Poverty eradication) and 3 (Good health and well-being).

(e)   Energy

23.   In 2011, the Sustainable Energy for All initiative was launched to ensure universal energy access. Affordable reliable, sustainable and modern sources of energy are a prerequisite for achieving many of the other Sustainable Development Goals.[7] Specific proposed actions under this thematic area will be concentrated on the effective use of space-derived data and geographic information systems for identification and mapping of the renewable energy potential, such as hydropower and geothermal, solar and wind energy. It will significantly contribute to the implementation of Sustainable Development Goal 7.

(f)   Climate change

24.   Responding to climate change is a major global challenge. The implementation of the United Nations Framework Convention on Climate Change and the Paris Agreement is essential to the achievement of at least four Sustainable Development Goals.[8] The regional road map works to help member States transition into more efficient, low-carbon economies to mitigate and adapt to the impacts of climate change.[9] The proposed actions under this area will focus on innovative geospatial information for climate studies and scenario development, including impact and vulnerability mapping, through existing programmes.

III.   Action areas to define the scope of implementation

25.   Action areas were introduced to provide parameters to the scope of implementation, with many identified under specific themes. A detailed overview of these is provided in the appendix to the present document.

---

[7]   *Enhancing Regional Economic Cooperation and Integration in Asia and the Pacific* (United Nations publication, Sales No. E.18.II.F.5).

[8]   Available at www.un.org/sustainabledevelopment/climate-change-2/.

[9]   Commission resolution 73/9.

Modalities under each of these actions which cut across all themes are also discussed below. The Intergovernmental Consultative Committee agreed that capacity development and technical support was a priority for most countries in the region, while recognizing that research and knowledge-sharing, through regional cooperation platforms, remain important supporting actions.

A.   Research and knowledge-sharing

26.   Research and knowledge-sharing activities are critical in further establishing the significant role that space applications can play in supporting actions under the different thematic areas. In addition, the acknowledgement of emerging and frontier technologies has been recognized, although in many cases it is unknown how those supporting digital innovations can be integrated with space applications. Actions which were identified as cross-cutting include:

(a)   Research and share knowledge on the use of space applications to support sustainable development;

(b)   Research and share knowledge on the barriers to utilizing space applications, including historical analysis of experiences to inform future recommendations development;

(c)   The ESCAP secretariat, in collaboration with the Commission's members and associate members, to biennially publish an Asia-Pacific report on space and geospatial information applications for sustainable development;

(d)   Encourage the exchange of experts, professionals and resource personnel on space applications to support knowledge-sharing;

(e)   Engage with youth to stimulate research and take advantage of innovations from young entrepreneurs.

B.   Capacity-building and technical support

27.   The majority of actions identified under this action area includes the development of capacity or provision of technical support on methodologies or the use of technologies. For that reason, the Intergovernmental Consultative Committee has suggested the need to clarify specifically which methodologies or technologies, whenever possible. Cross-cutting and reoccurring actions identified in this action area include:

(a)   Develop capacity and provide technical support to access, analyse and utilize Earth observation data and information, particularly for countries with special needs and those with limited capacity to use space applications;

(b)   Provide technical support to access and easily understand information and research related to space applications;

(c)   Provide technical support on integrating space applications with digital innovations, other sources of data and existing geospatial data platforms for evidence-based decision support.

C.   Intergovernmental discussions and regional practices

28.   The majority of actions identified under this action area involves working with existing intergovernmental mechanisms and with international and technical organizations. Given the breadth of thematic and sectoral areas covered, and the need for engagement across a broader set of line ministries and responsible authorities, beyond the traditional space applications sector, it is well-understood that actions are to be taken as appropriate and in line with national plans and in accordance with their respective needs, conditions and

capabilities as well as with their existing obligations. Specific actions that reoccur and cut across all themes include:

(a)   Support discussions and facilitate cooperation on the development of guidelines for integrating geospatial information with other sources of data to support relevant activities;

(b)   Develop a common understanding and work towards developing standards on spatial scale, temporal resolution and cartographic elements with regard to space applications;

(c)   Collect, share and promote good practices and experience on space policies and legislation, particularly those that support regional cooperation;

(d)   Raise awareness of the benefits and the barriers to accessing space applications at the policy and senior government levels;

(e)   Facilitate discussion, cooperation and promote good practices in the use of satellite data, tools, products and applications for sustainable development and encourage resource allocation at the national level for this purpose;

(f)   Work with existing intergovernmental mechanisms, and international and technical organizations to share satellite data and information to support their relevant agendas, coherent with the thematic areas identified in the Plan of Action and the Sustainable Development Goals;

(g)   Given the increasing commercialization of space applications, promote and facilitate discussions with private and commercial entities to support and continue Governments' access to satellite data and products for sustainable development.

IV.   Means of implementation as an ongoing collective effort

29.   The Plan of Action is designed to provide both a consolidated needs assessment for countries in the region that wish to utilize space applications for sustainable development, and a guide for partners that wish to support those countries in meeting the needs.

A.   Complementarity and partnerships with global and regional initiatives

30.   Implementation of the Plan of Action will contribute to the harmonization of regional actions and aims to reduce duplication of efforts, enhance cooperation and strengthen partnerships. It is a collective action between member States, the United Nations system, regional and international institutions, including the private sector and other stakeholders. 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. It is not envisioned that new mechanisms will be established, but that greater coordination will be strengthened with existing mechanisms, including but not limited to ESCAP regional institutions such as the Asian and Pacific Centre for the Development of Disaster Information Management and the Asian and Pacific Training Centre for Information and Communication Technology for Development.

31.   Regional and global space mechanisms are currently involved in the implementation of the 2030 Agenda. For example, the Group on Earth Observations, through the Asia-Oceania Group on Earth Observations, has been implementing a range of activities involving the use of space-based Earth observation data for specific thematic purposes such as oceans, biodiversity, climate change and water management. The European Space Agency, through

its Earth Observation for Sustainable Development initiative, has been working in areas of disaster risk reduction, climate resilience and urban development. It can provide support to mechanisms in mainstreaming the use of Earth observation data in international development activities for Asia and the Pacific. Other regional space cooperation frameworks, such as the Asia-Pacific Regional Space Agency Forum, and the Asia-Pacific Space Cooperation Organization, also have extensive programmes in various thematic areas. Specifically, Sentinel Asia, as a regional platform for Asia and the Pacific, has been making contributions to facilitate applications, research, capacity development and networking for promoting space-based technology, data and information towards disaster risk reduction. Regional institutions such as the Research and Training Center for Space Technology and Applications of the Association of Southeast Asian Nations (ASEAN) and the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management can help to develop the institutional capacity of member States on the use of geospatial information. The Committee of Experts on Global Geospatial Information Management are presently working to bring together geospatial experts and national statistical institutes to build the capacities to link statistics with geospatial information in the measurement of key indicators in the Sustainable Development Goals. The Plan of Action further seeks to engage, as appropriate, with the work of other relevant United Nations bodies, such as the United Nations Institute for Training and Research Operational Satellite Applications Programme, the United Nations Office for Outer Space Affairs, the United Nations Platform for Space-based Information for Disaster Management and Emergency Response and the entities of the United Nations system represented in the United Nations Inter-Agency Meeting on Outer Space Activities.

32.   Finally, the Plan of Action aims to enhance synergy by strengthening regional cooperation and harmonizing regional initiatives. ESCAP and other institutions involved in the development of this Plan of Action can help by providing a brokering service between countries, linking experts with those requiring support for specific actions.

B.   Existing capacities in the region

33.   Work relating to space applications and the benefits it provides to many sectors is rapidly evolving. Many agencies and regional or international groups are undertaking research and discussions on how space applications can be used to address concerns around natural resource management, climate change, food security and poverty eradication. Presenting this academic work to policymakers who can address these issues in an informed manner is an important role that organizations like ESCAP can play. Having intergovernmental committees in macroeconomics and poverty reduction, environment, trade, transport, energy, information and communications technology, disaster risk management, social development and statistics, ESCAP is ideally suited to advocate and sensitize ministers and government officials, bringing good practices from various organizations, the scientific and space community to the end users and decision makers. Furthermore, many countries have developed space policies or have initiatives and tools which they are willing to share or even help adapt to the conditions of other countries.

34.   In addition, several countries in the region have experts already experienced in the use of space technologies for many applications and are willing to provide expert training, advice, tools and information to countries that are less experienced or have less access, often as in-kind contributions of their time and resources. Some of these institutions, such as the Centre for

Space Science and Technology Education in Asia and the Pacific, the Asian Institute of Technology and the Chinese University of Hong Kong, have been engaged in such capacity-building initiatives. Many countries are actively engaged in supporting other developing countries with capacity-building, software, satellite and remote-sensing data, information and communications technology applications and expert advice.

C. Resources

35.   To support the actions set forth in the Plan of Action, appropriate and targeted financing will be needed. While it is envisaged that implementation and financing will primarily be the responsibility of national Governments, multiple financing sources can be utilized, and innovative ways sought, to support implementation at the national and regional levels.

36.   Financial resources will assist countries in responding to some of the identified challenges. To support and enable the use of space applications and their associate tools for sustainable development, a trust fund could contribute to narrowing the capacity gaps in the region, ensuring that an integrated approach is developed based on adequate resources, comprising a network of partners and linking to other initiatives outside the region. Other donors and partners could also support individual activities or parts of the Plan of Action.

37.   Many countries are already providing considerable in-kind support through satellite imagery and data, training, expert advice, software or tools, infrastructure, experience sharing and personnel to maintain regional resources and support other national Governments, all of which amounts to over a million dollars a year. Several countries in the region have experts already experienced in the use of space technologies for many applications and are willing to provide expert to countries less experienced. Governments have supported activities in the past, though great potential also exists to harness private sector support or develop effective public-private partnerships.

V.   Phased review of progress towards the Plan of Action

38.   The Intergovernmental Consultative Committee recognizes the need to review and amend the Plan of Action, as it covers a period until 2030, to reflect the evolving needs of countries, emerging technologies, shifting priorities and unforeseen challenges arising in the region. As a result, a phased review of implementation has been suggested over four-year periods, at the ministerial level. It should be noted that different sub-regions and countries have their own priorities. For example, research and knowledge-sharing are a higher priority for the Pacific region, and therefore Small Island developing States are likely to prioritize activities that fall into this category.

39.   Under this Plan of Action, national implementation is voluntary in nature and driven by country needs. It will guide participating countries and organizations on actions required of Governments, and allows intergovernmental mechanisms, national Governments and international and technical organizations to prepare their own work plans to support the Plan of Action. ESCAP will conduct biennial reviews with the support of member countries and report findings to the Intergovernmental Consultative Committee on the Regional Space Applications Programme for Sustainable Development and relevant ESCAP intergovernmental committees, to share experiences and seek support to overcome challenges though regional cooperation.

Appendix

Matrix of the Plan of Action

Disaster Risk Reduction and Resilience

Goals and targets	*Action Area 1* *Research and knowledge-sharing*	*Action Area 2* *Capacity-building and technical support*	*Action Area 3* *Intergovernmental discussions and regional practices*
		Innovation	
Sendai Framework for Disaster Risk Reduction Targets: 1, 2, 3, 4	• Identify interfaces between, and integration of, traditional space-based information and frontier technologies to address disaster risk management and build resilience. • Research opportunities for including Global Satellite Navigation System for infrastructure and utilities mapping, relevant to disaster damage assessment and early warning systems. • Research on tele-health solutions using space technology to improve the capacity to react to emergency health situations.	• 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. • Contribute to the sustainable reconstruction phase of infrastructure in the post-disaster phase and to the reinforcement of resilience through the Recovery Observatory concept.	• 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. • Discuss and promote the potential concept of a common regional information technology system to support activities related to space applications for sustainable development. • Promote discussions on data and information protocols for the use of global navigation satellite systems in all phases of disaster management. • Provide support to mitigate the effects of disasters occurring in Asia and the Pacific through the International Charter on Space and Major Disasters.

Goals and targets	Action Area 1 Research and knowledge-sharing	Action Area 2 Capacity-building and technical support	Action Area 3 Intergovernmental discussions and regional practices
	Risk reduction		
Sustainable Development Goal 11: Sustainable cities and communities Target: 11.5	• Share knowledge on the use of space-based information to enhance people-centred early warning systems and better understand elements at risk. • Participate in holistic research and development, in cooperation with international and regional initiatives, such as the Committee on Earth Observation Satellites Working Group on Disasters, and the Group on Earth Observations Data Access for Risk Management initiative.	• 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.	• Integrate geospatial analytical techniques and products into emergency and crises management processes and plans, according to national circumstances. • Promote the use of space applications in strengthening early warning systems by sharing good practices and discuss challenges in disseminating early warning information. • Promote the use of space applications for critical infrastructure mapping and support actions related to building resilient societies. • Integrate space applications to support the Sendai Framework Monitor system and relevant indicators.
	Disaster assessment		
	• Identify, collect and compile ground-based data required for disaster preparedness and response, e.g., population density, infrastructure (housing type), elements at risk and other baseline data. • Identify risk areas related to earthquakes at a regional level, through ground-based observation networks using global navigation satellite systems.	• Integrate ground-based and satellite systems for effective monitoring of hazards, disasters and critical infrastructure using global navigation satellite systems. • Provide support and access to pre-, during-and post-disaster satellite data to vulnerable and affected countries for damage assessment. • Carry out risk mapping of highly vulnerable areas and communities by identifying hazards, vulnerabilities and exposure to risks. • Identify risks from historical observations of natural hazards in preparing for natural disasters.	• Consult with meteorological satellite providers to provide data and information to disaster-affected countries, e.g., through data sharing norms or the International Charter on Space and Major Disasters. • Collect good practices on satellite-mapping products which can contribute to developing guidelines and principles.

Goals and targets	Action Area 1 Research and knowledge-sharing	Action Area 2 Capacity-building and technical support	Action Area 3 Intergovernmental discussions and regional practices
	Emergency response		
	• Develop and share tools, publications and guidelines relevant to Earth observation for disaster response. • Research and share knowledge on mobile information and communication technology tools for emergency response.	• Support and encourage becoming parties to the International Charter on Space and Major Disasters and regional frameworks, such as Sentinel Asia.	• Continue to ensure the smooth coordination of Earth observation data provided to disaster-affected countries, through existing global and regional mechanisms.
	Food production		
Sustainable Development Goal 2: Zero hunger Target: 2.4	• Analyse factors that determine crop productivity using statistical and modelling approaches, such as crop outlook, pest and insect outbreaks. using agrometeorological information derived from Earth observation data. • Map land and soil quality and productivity, for planting of appropriate crops. • Demand mapping for food production and processing against population density to understand the food security needs of the vulnerable sections.	• Provide technical support to map infrastructure related to food storage, warehousing, etc. and socioeconomic information to ascertain demand and distribution. • Develop capacity in terms of seasonal forecasting and its impact on agriculture. • Provide technical support for near real-time monitoring of weather conditions using meteorological and Earth observation satellite data.	• Support relevant discussions on seasonal forecasting and share good practices on common agricultural crops in existing intergovernmental forums, such as Group on Earth Observations Global Agricultural Monitoring, Asia-Pacific Regional Space Agency Forum and Space Applications for Environment initiatives. • Share knowledge on the package of practices for integrating geospatial information, with respect to site-specific capability in each country for future food planning.
	Agroecosystem resilience		
	• Mainstream climate information for agroecosystem resilience, e.g., livestock, aquaculture, fisheries, alternate livelihoods. • Share knowledge on developing soil maps for ecosystem management.	• 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. • Develop and strengthen user-tailored decision support tools for drought monitoring, early warning and management.	• Share experiences and findings from drought management systems which can contribute to regional policy directions. • Enhance cooperation in regional early warning and alert network, of countries in the region, to share information and data to reduce risk of transboundary disasters such as sand and dust storms, floods, cyclone and others.

Goals and targets	Action Area 1 *Research and knowledge-sharing*	Action Area 2 *Capacity-building and technical support*	Action Area 3 *Intergovernmental discussions and regional practices*
		Precision agriculture	
	• Research the application and integration of unmanned aerial vehicles, global navigation satellite systems, remote sensing and frontier technologies to support precision agriculture.	• Provide technical support to countries pursuing precision agriculture using unmanned aerial vehicles, global navigation satellite systems and Earth observation data for managing agricultural conditions.	• Promote the integration of space applications with other digital innovations to support precision agriculture.
		Climate hazards	
Sustainable Development Goal 13: Climate action Target: 13.1	• Integrate climate models, hazard information and Earth observation data for improving climate resilience.	• Provide technical support in disseminating information and results on multi-hazard risks, derived from climate change models and Earth observation data, to decision makers and those working at the policy levels. • Develop capacity for modelling climate hazards, as well as scenario and impact modelling.	• Collect good practices on using space and geo-informatics applications to better understand climate-related hazards, which can contribute to developing guidelines and principles. • Enhance regional information and data-sharing to reduce the risk and negative impact of slow-onset and climate-related hazards and disasters.

Management of Natural Resources

Goals and targets	Action Area 1 *Research and knowledge-sharing*	Action Area 2 *Capacity-building and technical support*	Action Area 3 *Intergovernmental discussions and regional practices*
		Water quality	
Sustainable Development Goal 6: Clean water and sanitation Targets: 6.1, 6.3, 6.5, 6.6	• Research and share knowledge on the applications of geospatial information for water recycling.	• Develop capacity for and provide technical support on mapping water quality.	• Exchange information and good practices to provide technical recommendations on methodologies for mapping water quality.
		Water resource management	
	• Research to better understand how space and geo-informatics applications can support estimations on water resources. • Share knowledge and identify hotspots for water demand in urban, rural as well as industrial and agricultural systems. • Identify areas for water harvesting structures and watershed ecosystems restoration.	• Develop capacity for and provide technical support on mapping and monitoring water resources. • Provide technical support on integrating space applications with meteorological and ground-based data to help ensure the sustainable use of water resources. • Provide technical support for combining space applications with other reliable data sources for sustainable water use planning at appropriate levels.	• Contribute to national efforts in the use of space applications for the development of river basin management plans and regional cooperation, as applicable. • Support intergovernmental discussions and facilitate the achievement of access to safe and affordable drinking water target by 2030, through the use of space applications and tools. • Work with existing intergovernmental mechanisms and international and regional organizations, as appropriate, to provide satellite data and information to support sustainable water use.
		Infrastructure	
Sustainable Development Goal 9: Industry, innovation and infrastructure Target: 9.4	• Research the integration of space applications and frontier technologies to support change detection of infrastructure and industries.	• Develop capacity for the monitoring of infrastructure and buildings, including complex large-scale engineering projects, to ensure environmental sustainability. • Provide capacity for the use of geospatial information, engineering data and risk information for modelling to inform urban planning and management.	• Share good practices on the use of space applications for change detection of infrastructure.

14

Goals and targets	Action Area 1 *Research and knowledge-sharing*	Action Area 2 *Capacity-building and technical support*	Action Area 3 *Intergovernmental discussions and regional practices*
		Natural and cultural heritage	
Sustainable Development Goal 11: Sustainable cities and communities Targets: 11.4, 11.6, 11.b	• Research on the use of satellite data to protect and safeguard cultural and natural heritage.	• Develop capacity for identifying and mapping cultural and natural heritage sites, including 3D modelling and terrestrial laser scanning for visualization.	• Work with existing intergovernmental mechanisms and international and regional organizations to provide satellite data and information to support the implementation of national natural and cultural heritage protection plans.
		Waste management	
	• Research the use and integration of space applications with other sources of data, for management of waste, including collection and transportation.	• Provide technical support on the use of space applications and analysis for site selection, landfill monitoring and waste management (solid, liquid and gas). • Develop capacity for the use of remote sensing and global navigation satellite systems to monitor the collection and transportation of waste.	• Work with existing intergovernmental mechanisms and international and regional organizations to provide satellite data and information to support waste management policies.

Goals and targets	Action Area 1 *Research and knowledge-sharing*	Action Area 2 *Capacity-building and technical support*	Action Area 3 *Intergovernmental discussions and regional practices*
		Urban planning	
	• Research techniques for using space applications and frontier technologies to monitor unplanned development of urban settlements over time.	• Develop capacity for mapping and modelling urban and peri-urban areas and settlements. • Develop capacity to use space applications to monitor urban pollution, including urban heat island effects and air and water quality. • Develop capacity to use space applications and other digital innovations for mapping urban areas and facilities to support urban planning. • Develop capacity to use space applications and other digital innovations to monitor unplanned development of urban settlements over time. • Develop capacity to use space applications for urban planning and development.	• Promote discussion and sharing of information on the use of space applications for monitoring air quality. • Share experiences and good practices on the use of space applications for urban planning, to inform policymakers and local governments.
		Consumption and production	
Sustainable Development Goal 12: Responsible consumption and production Target: 12.2	• Research on how space applications can be used to raise public awareness on degradation and depletion of natural resource due to over exploitation with time. • Application of space-based data for mineral targeting and exploration as well as responsible mining of rich mineral resources.	• Develop capacity for mapping consumption and production patterns in different areas and sectors using geospatial information.	• Work with existing intergovernmental mechanisms and international and regional organizations to promote the use of space applications for corporate social responsibility.
		Marine and ocean pollution	
Sustainable Development Goal 14: Life below water Targets: 14.1, 14.2, 14.4, 14.5, 14.7	• Identify the appropriate models to monitor and map coastal and ocean water quality.	• Develop capacity to use space applications to assess the impacts of pollution near coastal areas and in marine environments. • Provide technical support and develop capacity to monitor and model the impacts of sedimentation on marine ecosystems.	• Work with existing intergovernmental mechanisms and international and regional organizations, as appropriate, to provide satellite data and information to support the development of guidelines for marine pollution management. • Promote cooperation, awareness-raising and networking on the use of space applications for combating marine and ocean pollution.

Goals and targets	Action Area 1 *Research and knowledge-sharing*	Action Area 2 *Capacity-building and technical support*	Action Area 3 *Intergovernmental discussions and regional practices*
	Marine ecosystems		
	• Share experience on monitoring marine ecosystems, such as marine sanctuaries, mangrove, coral, seagrass, using space applications.	• Provide technical support and develop capacity on potential fishing zone mapping. • Provide technical support to measure sea surface temperature, surface winds, wave height, ocean colour, phytoplankton, among others.	• Work with existing international and regional mechanisms, as appropriate, to provide satellite data and information to support the management of marine ecosystems.
	Coastal ecosystems		
	• Better understand the global and local causes of coastal erosion and monitor subsidence using radar satellites for crustal deformation and subsidence using interferometry.	• Monitor shoreline changes using satellite data. • Monitor coastal erosion and accretion and its impact on marine life. • Provide technical support to monitor and analyse coastal ecosystems, including sea surface temperature, chlorophyll, fish distribution.	• Share good practices on monitoring erosion using space applications from national and regional frameworks such as the Asia-Pacific Regional Space Agency Forum's Space Applications for Environment initiatives.
	Sustainable fisheries		
	• Share knowledge on the methodologies and techniques for using space applications to support fisheries.	• Provide technical support and develop capacity for the use and integration of geographic information systems, global navigation satellite systems, and satellite communications with marine and maritime services to combat illegal, unreported and unregulated fishing.	• Identify good practices and promote cooperation on using space applications to support sustainable fisheries.

Goals and targets	Action Area 1 *Research and knowledge-sharing*	Action Area 2 *Capacity-building and technical support*	Action Area 3 *Intergovernmental discussions and regional practices*
		Forests	
Sustainable Development Goal 15: Life on land Targets: 15.1, 15.2, 15.3, 15.4, 15.5	• Develop methodologies for detecting forest cover change and disturbances, including invasive species, fire, haze, using high spatial and temporal resolution and optical and radar satellite data.	• Develop capacity to assess deforestation and forest changes over time using satellite data. • Provide technical support for fire risk mapping, haze and mapping of protected areas. • Provide technical support, including satellite data, tools and knowledge, to monitor forest dynamics and to aid in forest management. • Provide technical support and develop capacity to identify afforestation and reforestation areas.	• Work with existing intergovernmental mechanisms and international and regional organizations to provide satellite data and information to support conservation and management of forests.
		Biodiversity and endangered species	
	• Identify threats to ecosystem and monitor biodiversity loss using space applications. • Research and share knowledge on the use of mobile technology or automated image recognition for monitoring natural habitats. • Research on methodologies and techniques for biodiversity characterisation, conservation and ecosystem management.	• Provide technical support and develop capacity for using satellite data and global navigation satellite systems to support monitoring of biodiversity management including protected areas and species. • Provide technical support on monitoring recovery of terrestrial ecosystems, including slope and aspect analysis.	• Work with existing intergovernmental mechanisms and international and regional organizations to provide satellite data and information to support conservation and management of terrestrial ecosystems, in line with international agreements. • Work with existing intergovernmental mechanisms and international and regional organizations to agree on standards and methodologies for biodiversity characterization.

Goals and targets	Action Area 1 *Research and knowledge-sharing*	Action Area 2 *Capacity-building and technical support*	Action Area 3 *Intergovernmental discussions and regional practices*
		Land use change	
	• Share knowledge on methodologies for integrating space applications and frontier technologies for land use classification.	• Provide technical support and develop capacity on monitoring land use change across all terrestrial ecosystems.	• Work with existing intergovernmental mechanisms and international and regional organizations to agree on standards and methodologies for the identification of land use classifications.
		Land degradation and desertification	
	• Research and share knowledge on the use of space applications to support methodologies in mapping land suitability and land capability.	• Provide technical support to develop capacity to identify land degradation and desertification.	• Work with existing intergovernmental mechanisms, and international and regional organizations, to provide satellite data and information to support the development and implementation of land degradation neutrality guidelines.

Connectivity

Goals and targets	Action Area 1 *Research and knowledge-sharing*	Action Area 2 *Capacity-building and technical support*	Action Area 3 *Intergovernmental discussions and regional practices*
		Road traffic incidents	
Sustainable Development Goal 3: Good health and well-being Target: 3.6	• 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. • Explore good practices of using the accident emergency response systems, based on global navigation satellite systems and other applications, to save lives and mitigate injuries of road traffic accident victims or casualties, and other emergencies on the roads.	• Provide technical support and develop capacity to integrate satellite data and ground data from multiple sources to identify accident hotspots, observe traffic conditions and analyse driving behaviours to manage traffic. • Promote the use of intelligent transport systems and global navigation satellite systems and in establishing reliable, safe and cost-effective routes. • Promote the use of space applications in the transportation of passengers and cargo.	• Work with existing intergovernmental mechanisms and international and regional organizations to provide satellite data and information to support the development and implementation of traffic rules and regulations, transport management and infrastructure, to minimize road traffic incidents and inform other relevant policies.
		Scholarships	
Sustainable Development Goal 4: Quality education Target: 4.b	• Promote ongoing research in space, applications for sustainable development, through scholarships and research grants, and share knowledge on relevant innovative research.	• 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.	• Share experiences on scholarship programmes and good practices on maximizing the impacts of scholarship recipients. • Discuss opportunities for increasing the number of scholarships to conduct innovative research in space applications, particularly for countries with special needs.

21

Goals and targets	Action Area 1 *Research and knowledge-sharing*	Action Area 2 *Capacity-building and technical support*	Action Area 3 *Intergovernmental discussions and regional practices*
		Access to the Internet	
Sustainable Development Goal 9: Industry, innovation and infrastructure Target: 9.c	• Research innovations in satellite communications to support cost-effective access to the Internet. • Provide access to high-speed internet for educational purposes, especially for those in remote locations.	• Develop capacity to utilize satellite communications and establish low-cost information and communications technology to improve access to the Internet, especially for poorer communities.	• Contribute to regional cooperation efforts in the use of space applications for improving access to the Internet. • Promote information and communications technology inclusiveness, access to favourable modern technology for everyone, especially in developing countries.
		Migration	
Sustainable Development Goal 10: Reduced inequalities Target: 10.7	• Research and share knowledge on how geospatial information can be used to map historical trends in migration. • Research on how high-resolution satellite imagery and global navigation satellite systems can be integrated with frontier technologies to identify displacement from disasters and emergencies.	• Develop capacity to utilize geospatial information and high-resolution satellite imagery including cross-border and internal disaster displacement, temporary shelters and structures, etc., for humanitarian and development purposes.	• Work with existing intergovernmental mechanisms and international and regional organizations to provide satellite data and information to support the orderly, safe, regular and responsible migration and mobility of people and to inform planned and well-managed migration policies.
		Transport systems	
Sustainable Development Goal 11: Sustainable cities and communities Targets: 11.2, 11.3	• 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.	• Develop capacity to monitor ground, air and marine transport using space applications and other data and information.	• Share good practices on the use of space applications to support the development of efficient and resilient transport systems and relevant policies.

Social Development

Goals and targets	Action Area 1 *Research and knowledge-sharing*	Action Area 2 *Capacity-building and technical support*	Action Area 3 *Intergovernmental discussions and regional practices*
		Poverty including human poverty and income poverty	
Sustainable Development Goal 1: No poverty Target:1.5	• Research methodologies on how to utilize space applications to identify and distinguish socioeconomic development, e.g., poverty mapping, satellite data for night lights.	• Develop capacity to produce poverty maps to understand the spatial distribution of poverty and inequality.	• Discuss ways to integrate space applications and geospatial information into poverty measurement and methodologies.
		Vulnerable groups	
	• Economic mapping to understand the impacts of climate-related events on the socioeconomic conditions of vulnerable groups.	• Develop capacity on how to disaggregate and geo-reference vulnerable groups from integrated data sources and map against natural hazard exposure. • Develop community-based hazard maps to raise awareness on preparedness and mitigation. • Identify underlying risk factors and mutual effects of poverty and vulnerability, against disasters risks, and develop relevant indicators for monitoring and measurement.	• Promote the disaggregation of vulnerable groups when using space applications to map socioeconomic indicators.
		Health management	
Sustainable Development Goal 3: Good health and well-being Targets: 3.9, 3.d	• Better understand health risks and identify the causal factors of disease spread, including human and animal, etc. • Research on how geographic information system, global navigation satellite systems and satellite communications can be used to minimize the spread of health epidemics. • Research methodologies for geo-referencing and disaggregating health data, such as obesity and malnutrition. • Research and share knowledge on the use of satellite communications and frontier technology to address gaps in telemedicine.	• Develop capacity to map health risk hotspots using geospatial information and big data. • Monitor health impacts, including those of livestock, agriculture and aquaculture through Earth observation.	• 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. • Promote cooperation among neighbouring countries and work with intergovernmental mechanisms and international and regional organizations to address transboundary health risks, i.e., the spread of disease or condition of air quality. • Strengthen space cooperation for global health and newly encountered diseases.

Goals and targets	Action Area 1 *Research and knowledge-sharing*	Action Area 2 *Capacity-building and technical support*	Action Area 3 *Intergovernmental discussions and regional practices*
	• Extend research in early warning, risk mapping and risk reduction to incorporate health risks to livestock, agriculture and aquaculture.		

Contamination and pollution

	Action Area 1 *Research and knowledge-sharing*	Action Area 2 *Capacity-building and technical support*	Action Area 3 *Intergovernmental discussions and regional practices*
	• Identify hazardous chemicals, pollutants and contaminants using satellite information.	• Build capacity on how to monitor and support the clean-up of pollution and contamination using Earth observation. • Provide technical support in monitoring and forecasting movement of air mass and ocean currents, in the context of pollutants (i.e., oil spills). • Develop capacity to use space applications to monitor air pollution including dust, smog and other pollutants from hazardous chemicals, pollutants and contaminants.	• Raise awareness on different sources of data on pollutants and contaminants and work with existing intergovernmental mechanisms and international and regional organizations in this regard.

Energy

Goals and targets	*Action Area 1* *Research and knowledge-sharing*	*Action Area 2* *Capacity-building and technical support*	*Action Area 3* *Intergovernmental discussions and regional practices*
	Modern and sustainable energy services		
Sustainable Development Goal 7: Affordable and clean energy Target: 7.b	• Research and map the renewable energy potential using space applications. • Research the use of satellite data and information to identify traditional energy sources. • Research the integration and use of space applications with other sources of data to determine energy demand and consumption. • Research the use and movement of biomass stocks using space applications. • Research the use of space applications for energy infrastructure site selection including wind, wave and solar infrastructure.	• Develop capacity to map the sources and movement of biomass energy. • Develop capacity to use space applications for identification and mapping of renewable energy potential, such as hydropower and geothermal and solar energy. • Develop capacity to use space applications for mapping and supporting the development and planning of power lines, gas lines and necessary infrastructure for delivery and transport of energy services.	• 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.

Climate Change

Goals and targets	*Action Area 1* *Research and knowledge-sharing*	*Action Area 2* *Capacity-building and technical support*	*Action Area 3* *Intergovernmental discussions and regional practices*
		Mitigation and adaptation	
Sustainable Development Goal 13: Climate action Target: 13.2	• Research on measuring greenhouse gas concentration from meteorological and Earth observation, using greenhouse gas observation satellites. • Share knowledge on the use of space applications to support mitigation and adaptation programmes in agriculture, forestry and water, e.g., crop selection, water resource management. • Contribute to climate studies in developing climate scenarios to understand projected climate events based on historical data and information, including climate impact and vulnerability mapping. • Share knowledge on the use of space applications for climate adaptation and mitigation in urban planning and management. Explore the use of remote sensing and global navigation satellite systems for adaptation. • Explore the use of remote sensing and global navigation satellite systems for adaptation. • Extended research in climate studies and the improvement of climate and weather models, using space-based data.	• Provide technical support on monitoring and measuring greenhouse gas emissions and absorption. • Develop capacity for using space applications for climate modelling and scenario development, including impact and vulnerability mapping, through existing programmes. • Provide access to archives of Earth observation data, in-situ measurements and products derived from space data through the Space Climate Observatory.	• Promote the use of evidence-based information to support decision-making on the effects of climate change. • 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. • Support monitoring climate change through regional centres and organizations, as appropriate. • Support the strengthening of dialogue between scientists, policymakers and society through the Space Climate Observatory.

25

Ministerial Declaration on Space Applications for Sustainable Development in Asia and the Pacific

As adopted by the Third Ministerial Conference on Space Applications for Sustainable Development in Asia and the Pacific in Bangkok on 10 October 2018.

1.   *We, the Ministers for space and Heads of delegations of the members and associate members of the Economic and Social Commission for Asia and the Pacific*,

2.   *Having met* in Bangkok on 10 October 2018 at the Third Ministerial Conference on Space Applications for Sustainable Development in Asia and the Pacific, co-organized by the Government of Thailand and the Economic and Social Commission for Asian and the Pacific,

3.   *Reaffirming our commitment* to General Assembly resolution 70/1 of 25 September 2015, entitled "Transforming our world: the 2030 Agenda for Sustainable Development", and to the achievement of the Sustainable Development Goas and targets contained therein, based on each country's individual situation and development context,

4.   *Reaffirming also our commitment* to General Assembly resolution 69/313 of 27 July 2015 on the Addis Ababa Action Agenda of the Third International Conference on Financing for Development, which is an integral part of the 2030 Agenda for Sustainable Development,

5.   *Noting* the importance of the draft resolution entitled "Fiftieth anniversary of the First United Nations Conference on the Exploration and Peaceful Uses of Outer Space: space as a driver of sustainable development", endorsed by the Committee on the Peaceful Uses of Outer Space, at its sixty-first session, for submission to the General Assembly for adoption at its seventy-third session, in which the importance of global partnership and strengthened cooperation among Member States, intergovernmental and non-governmental organizations, industry and private sector entities, as appropriate, in fulfilling the "Space2030" agenda and its implementation plan, once agreed, is acknowledged,

6.   *Recalling* Economic and Social Council resolution 2018/14 of 2 July 2018 on the Strategic Framework on Geospatial Information and Services for Disasters for the improvement of geospatial information and services for disasters and the development and implementation of geospatial information policy, processes and services to support emergency response and disaster risk reduction that are aligned with the outcome of and follow-up to the Sendai Framework for Disaster Risk Reduction 2015–2030[10] and its implementation,

7.   *Recalling also* Economic and Social Council resolution 2015/31 of 22 July 2015 and the recent establishment of the Asian and Pacific Centre for the Development of Disaster Information Management, which contributes to the programme of work of the Commission in the area of information and communications technology and disaster risk reduction,

---

[10] General Assembly resolution 69/283, annex II.

8.   *Acknowledging* the contributions of space technology, digital innovations and geospatial information applications in addressing sustainable development in the region, and recognizing the potential for further development of these innovative technologies as a means of implementation that can help to further stimulate sustainable development efforts in the region,

9.   *Recalling* Commission resolution 73/9 of 19 May 2017 on the regional road map for implementing the 2030 Agenda for Sustainable Development in Asia and the Pacific, in which it endorses the prioritized framework and mechanism to promote sustainable development implementation in the Asia-Pacific region,

10.   *Acknowledging* the need for coherence across global and regional frameworks such as the 2030 Agenda for Sustainable Development, the Sendai Framework for Disaster Risk Reduction, the SIDS Accelerated Modalities of Action (SAMOA) Pathway[11] and the regional road map for implementing the 2030 Agenda for Sustainable Development in Asia and the Pacific,[12] as well as national frameworks regarding the access, utilization, capacity and integration of space applications into all appropriate sectors of sustainable development,

11.   *Recalling* the First Ministerial Conference on Space Applications for Development in Asia and the Pacific, held in Beijing on 23 and 24 September 1994, which established the Regional Space Applications Programme for Sustainable Development as a regional cooperation mechanism for providing valuable space-based information and resources to countries in the region and supporting regional and global efforts in the peaceful uses of outer space,

12.   *Recalling also* Commission resolution 69/11 of 1 May 2013 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, and the Plan of Action annexed thereto, in which the Commission is requested to take the lead in implementing the Plan of Action in the region,

13.   *Recalling further* that in the Declaration on Applications of Space Technology to Support Implementation of the 2030 Agenda for Sustainable Development adopted by the Asia-Pacific Space Leaders Forum, held in New Delhi on 2 November 2016, space leaders reaffirmed the need for closer cooperation, for the development of a new Asia-Pacific plan of action on space applications for sustainable development (2018–2030) and for coherence among global frameworks,

14.   *Adopt* the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018–2030), as contained in annex III to the report of the Third Ministerial Conference on Space Applications for Sustainable Development in Asia and the Pacific,[13] bearing in mind that its implementation would be voluntary and depends on each country's national circumstances and development priorities;

---

[11]   General Assembly resolution 69/15, annex.

[12]   E/ESCAP/73/31, annex II.

[13]   ESCAP/MCSASD/2018/2.

15.   *Encourage* members and associate members to work together closely and develop appropriate joint programmes and projects that are aligned with the priority themes, goals, targets and actions of the Plan of Action;

16.   *Encourage* members and associate members, United Nations agencies, international and regional organizations, the private sector and other relevant stakeholders to enhance cooperation, as appropriate, in support of the implementation of the Plan of Action and to contribute to a "Space2030" agenda, to be formulated by the Committee on the Peaceful Uses of Outer Space;

17.   *Encourage* members and associate members to work together, within existing frameworks, to mainstream the use of space technology and geospatial information applications, where possible, in all appropriate aspects of sustainable development, as national and regional champions, and in our multiple capacities across other relevant forums;

18.   *Also encourage* members and associate members to promote and enhance women's participation, particularly in science and technology education and in using space applications for sustainable development and disaster risk reduction;

19.   *Express our appreciation* to members and associate members for their valuable contributions and efforts to further the use of space technology and geospatial information applications, globally and in the region, and pledge to continue to work collectively and assiduously towards the emergence of Asia and the Pacific as a model region for cooperation in space technology applications, demonstrated by the regional mechanisms in operation;

20.   *Request* the Executive Secretary:

    (a)   To facilitate the implementation, in line with the Commission's mandates, of the Plan of Action by mobilizing appropriate resources;

    (b)   To promote, as appropriate, regional and sub-regional cooperation and to foster the sharing of good practices and lessons learned to ensure coherence with global, regional and national frameworks and commitments;

    (c)   To assist members and associate members, upon request, in developing national polices and strategies related to space applications and geospatial information and in providing technical assistance and capacity development when necessary;

    (d)   To provide to members and associate members biennial reports on space and geospatial information applications for sustainable development in Asia and the Pacific, and to convene at the ministerial level, at a time that coincides with the end of the phases of implementation of the Plan of Action;

21.   *Express our appreciation* to the Government of Thailand and to the secretariat for bringing together Ministers and high-level representatives, and pledge to redouble our cooperation on sustainable uses of space technology and geospatial information applications.

Integrating Geospatial Dimensions for a Sustainable Asia-Pacific
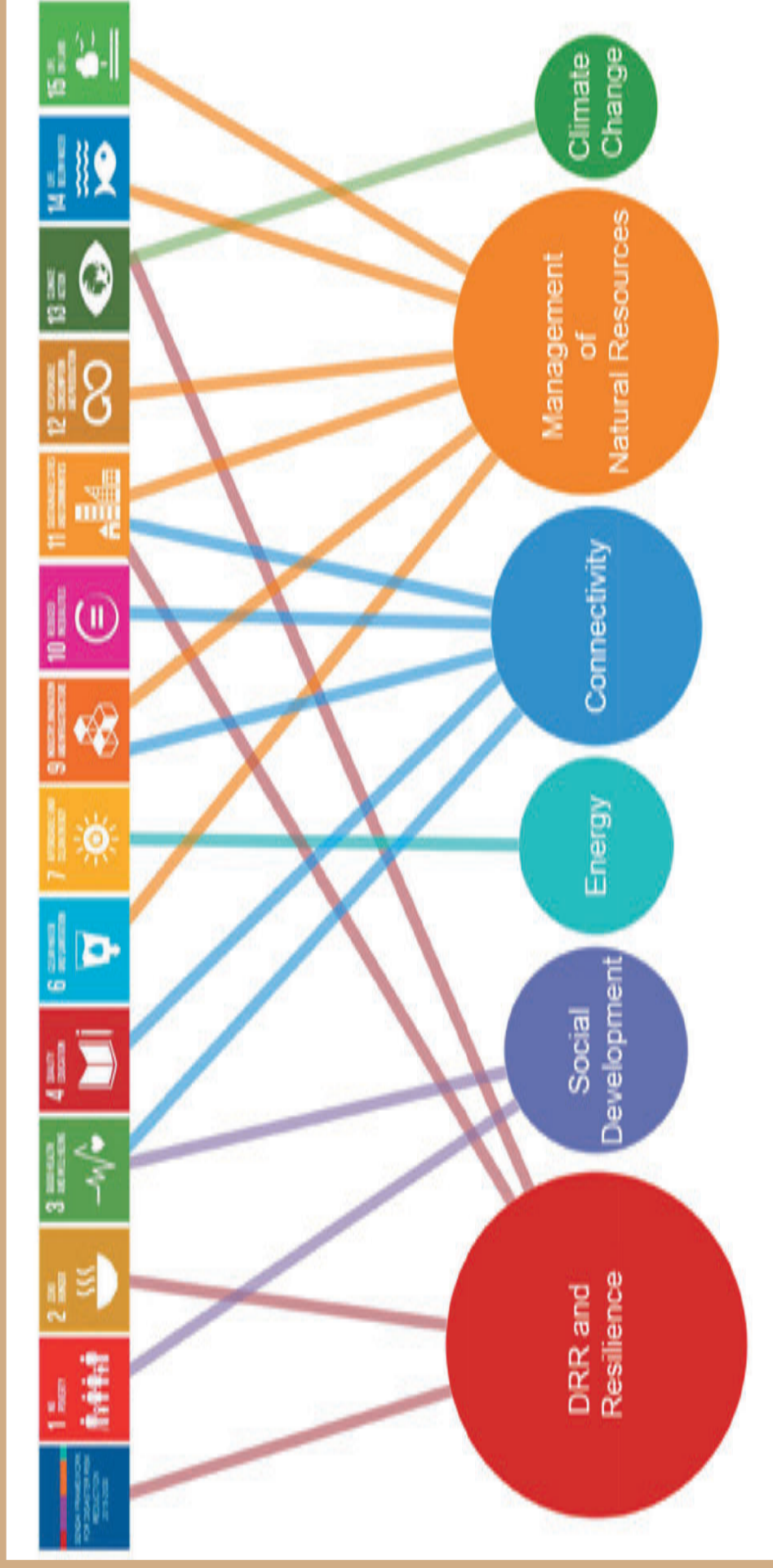
- **188 Actions** in six thematic areas
- **14 Goals:** where space applications can significantly contribute to global framework
- **37 Targets:** as prioritized by the space community for the Asia-Pacific region