
Evaluation of the Implementation of the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018-2030) in its Phase I (2018-2022)

September 2022

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List of acronyms

ADPC	Asian Disaster Preparedness Center
AI	Artificial Intelligence
AIP	Actionable Intelligence Policy
AOGEO	The Asia-Oceania Group on Earth Observations
APDRN	Asia-Pacific Disaster Resilience Network
APEF	Asian and Pacific Energy Forum
API	Application Programming Interface
AP-IS	Asia-Pacific Information Superhighway
APRSAF	Asia-Pacific Regional Space Agency Forum
APSCO	Asia-Pacific Space Cooperation Organization
ARTSA	ASEAN Research Training Center for Space Technology and Applications
ASEAN	Association of Southeast Asian Nations
ASMC	ASEAN Specialized Meteorological Centre
CADIS	Central Asia Drought Information System
CASA	Cooperation on the Analysis of Carbon Satellites Data
CDDR	Disaster Data Response Mechanism
CHIRPS	Climate Hazards Group InfraRed Precipitation with Station data
CD	Carbon Dioxide
COPUOS	United Nations Committee on the Peaceful Uses of Outer Space
COVID-19	Coronavirus disease of 2019
CSSTEAP	Centre for Space Science and Technology Education in the Asia and Pacific
DRR	Disaster Risk Reduction
EO	Earth Observation
ESA	The European Space Agency
ESCAP	Economic and Social Commission for Asia and the Pacific
EWS	Early Warning Service
FAO	Food and Agriculture Organization
FASSSTER	Spatio-Temporal Epidemiological Modeler
FRDP	The Framework for Resilient Development in the Pacific
GEMMA	GIS-Enabled Mapping Modelling and Analysis – Singapore
GEMS	Geostationary Environment Monitoring Spectrometer
GEO	Group on Earth Observations
GEOGLAM	Group on Earth Observations Global Agricultural Monitoring Initiative
GEOSS	Global Earth Observation Systems of Systems
GEP	Global Electrification Platform
GGRF	Global Geodetic Reference Frame
GIS	Geographic Information Systems
GISTDA	Geo-Informatics and Space Technology Development Agency
GNSS	Global Navigation Satellite System
GPM	Global Precipitation Measurement
GPS	Global Positioning System
ICG	International Committee on GNSS

ICT	Information and Communications Technology
IDA	Initial Damage Assessment
IGIF	United Nations Integrated Geospatial Information Framework
IGMASS	International Global Aerospace System
ISRO	Indian Space Research Organization
JAXA	Japan Aerospace Exploration Agency
MGA	Multi-GNSS Asia
MODIS	Moderate Resolution Imaging Spectroradiometer
NAP-DRR	National Strategic Action Plan for Disaster Risk Reduction
NASA	National Aeronautics and Space Administration
NRM	Natural Resource Management
NSDI	National Spatial Data Infrastructure
ODC	Open Data Cube
OECD	Organization for Economic Cooperation and Development
OSM	OpenStreetMap
QZSS	Quasi-Zenith Satellite System
RADI	Remote Sensing and Digital Earth
RDCYIS	Regional Drought and Crop Yield Information System
RESAP	Regional Space Applications Programme for Sustainable Development
RFSA	Roscosmos Russian Federal Space Agency
SAR	Synthetic Aperture Radar
SFDRR	Sendai Framework for Disaster Risk Reduction
SIDS	Small Island Developing States
SPARRSO	Space Research and Remote Sensing Organization, Bangladesh
UAV	Unmanned Aerial Vehicle
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UN-GGIM	United Nations Committee of Experts on Global Geospatial Information Management
UNITAR	United Nations Institute for Training and Research
UNOOSA	United Nations Office for Outer Space Affairs
UNOSAT	United Nations Operational Satellite Applications Programme
UN-SPIDER	United Nations Platform for Space-based Information for Disaster
USAID	United States Agency for International Development
WFP	World Food Programme
WMO	World Meteorological Organization

Executive summary

The evaluation of the implementation of the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018-2030) in its Phase I (2018-2022)¹ was launched in June 2022 and completed in September 2022. The evaluation was conducted by an external evaluator in accordance with the norms and standards of evaluation set out in the ESCAP Monitoring and Evaluation Policy and Guidelines. The evaluation covered the activities of the PoA (Phase I) and the cooperation practices of the ESCAP with other development partners, including other UN regional commissions and agencies, global/regional/subregional organizations, and academia to conduct activities in support of the implementation of the PoA (Phase I).

The purpose of the evaluation was to inform deliberations in the Ministerial Conference on the implementation of the PoA (Phase I) and provide recommendations for improvement in the implementation of the next phase of the PoA (2022-2026) in line with the 2030 Agenda for Sustainable Development. The evaluation applied a participatory approach and used various data collection techniques, including semi-structured interviews with key internal and external stakeholders, online surveys, and structured documentary analyses. It resulted in the following key findings and conclusions:

- The design and implementation of the Plan of Action (Phase I) were deemed to be highly relevant to the strategic development needs and priorities of the Member States. The findings also recognized that while the Plan of Action (Phase I) integrated a broad range of thematic areas, not all are entirely relevant to or are on the top of the priority list of all member States. This reflects the wide geopolitical, social and economic diversity of the Commission's members and associate members.
- The results achieved through the implementation of the Plan of Action and its interventions were found to be tangible. Preliminary responses to the secretariat's survey show over 550 actions from six countries alone in the six thematic areas of the Plan of Action in Phase I. The examples highlighted in the document ESCAP/MCSASD/2022/1² constituted successful approaches with definite scale-up potential.
- With regard to effectiveness, the Plan of Action served as an effective platform for accumulating and sharing knowledge on issues and building member States' capacity. In general, stakeholders from governments who participated in the evaluation are mainly subject-matter experts familiar with their own thematic areas of specialization, but , had limited knowledge of the Plan of Action in its entirety.
- The technical support and capacity-building activities offered by the secretariat within each of the thematic areas of the Plan of Action proved to be a successful model for further replication to cover existing and potentially new areas (including resilience and recovery from the impacts of COVID-19). However, the contribution of the Plan of Action implementation to the related SDGs needs to be more explicitly recognized and measured. A more structured pathway is needed to assess and monitor over the implementation period the contributions attributable solely to the Plan of Action to the achievement of the Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction.

¹ Hereafter the PoA (Phase I)

² Available at https://unescap.org/sites/default/d8files/event-documents/SECRETARIAT%20NOTE%20ON%20SPACE%2B%20_0.pdf

- In terms of efficiency, the secretariat successfully engaged diverse stakeholders and established a number of activity-based partnerships with United Nations agencies, development partners, as well as global, Asia-Pacific, and subregional organizations for the delivery of concrete initiatives. In the next phase of the Plan of Action, it is expected that such partnerships will be deepened and additional bilateral and multilateral cooperation in the form of South-South cooperation and triangular cooperation and interaction between RESAP members and the secretariat will be promoted.
- The secretariat successfully facilitated knowledge sharing from countries that have implemented and achieved results from the Plan of Action through user-oriented group meetings to disseminate knowledge to other countries for them to follow the practices. The secretariat should continue to prioritise capacity building and knowledge sharing as part of the next phase of Plan of Action with a clearer linkage between the Plan of Action implementation and its contribution to Sustainable Development Goals targets and related indicators.
- While the gender mainstreaming agenda remains ambiguous for most stakeholders, the increasing interest in the matter provides an opportunity to reinforce discussions in the next phase of the Plan of Action on the gender equality and social inclusiveness aspects.

Based on the findings and conclusions, the evaluation offers several strategic recommendations for the member States and the secretariat on implementing the next phase of the PoA.

Recommendations for the member States on the thematic areas and framework for the next phase of the PoA:

- 1) To accelerate the implementation of the Plan of Action through leveraging innovative digital applications, engaging end-users and the youth, effectively managing geospatial information, and strengthening partnerships based on national and local needs.
- 2) To prioritize the actions for implementation in the next phase of Plan of Action based on the national and local needs; and to strengthen the linkages of outcomes of actions taken in the next phase of Plan of Actions with the indicators of relevant Sustainable Development Goals taking into account new development trends and emerging issues (e.g., COVID-19 pandemic recovery)
- 3) To enhance sharing of knowledge, geospatial information, operational tools and experiences with other countries through regional cooperation mechanisms, such as the Regional Space Applications Programme for Sustainable Development.

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