

Regional Space Application Programme for Sustainable Development in Asia and the Pacific

Providing satellite-derived data and images to support evidence-based approaches for better informed and timely decision-making

Challenge

Space technology applications and geospatial data have played a growing role in supporting the implementation of the 2030 Agenda for Sustainable Development, the Sendai Framework for Disaster Risk Reduction 2015-2030 and the Paris Agreement on Climate Change. Asia-Pacific regional cooperation platforms and networks related to space technology applications and disaster risk management, including the Regional Space Applications Programme for Sustainable Development (RESAP), have extended their spheres to address global sustainable development challenges beyond disaster risk reduction. Despite the available benefits of space applications, many developing countries still do not have sufficient access to such innovative technologies, infrastructure or the human capacity to effectively utilize and apply these tools, which remains a challenge.

Towards a Solution

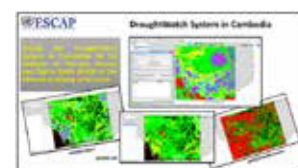
Space applications can provide far-reaching solutions to some of the most pressing issues facing humanity, ranging from food security to social development, natural resource management, climate change, disaster risk reduction and resilience building. They provide satellite-derived data and images that can support evidence-based approaches for better-informed and timelier decision-making, both critical for the setting up of early warning systems for disaster risk reduction and saving lives in the aftermath of a disaster. The application of this information for medium-term development planning and more accurate monitoring and evaluation of development interventions are equally important.

With rapid advances in space technology and increasing access to space-based information that provides several opportunities to disaster managers on the use of space technology for disaster management, RESAP has made concerted efforts to promote geospatial services to support disaster risk reduction and inclusive and sustainable development.

As part of the cross-country transfer of good practices and knowledge, the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) through its RESAP network promptly responds to requests for support from disaster-affected member States by mobilizing satellite-derived products and services. For example, in 2017–2018, more than 400 satellite images and products for drought, cyclone, earthquake and flood were provided to disaster-affected countries as a 24/7 service with free data and support from RESAP member countries. These data and services are worth over USD 1 million. Access to earth observation data for member States not only addresses technical gaps and challenges in accessibility, but also copyright and transboundary issues with regard to sharing.

Specifically, drought monitoring from space has been prioritized. It is believed that the impacts of climate change will be particularly felt through periodic weather events, considered climate risk fault lines, such as the monsoon rainfall and El Niño/La Niña events, causing widespread heatwaves, sand and dust storms, floods, cyclones and

13 CLIMATE ACTION



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droughts. ESCAP's Regional Cooperative Mechanism for Drought Monitoring and Early Warning (Regional Drought Mechanism), which serves as an operational programme of RESAP, is a good example of South-South and triangular cooperation. It brings together developed and emerging countries, with advanced experience in using innovative space applications with high disaster-risk countries that could use the information and tools but lack the knowledge or capacity to do so. High disaster-risk countries typically are least-developed countries and SIDS. The Mechanism has created a toolbox of products, information and services to support drought-prone developing countries in enhancing their resilience, which can be replicated and adapted to different country contexts.

As examples of such cross-country transfer of good practices, **through its technical service nodes in China, India and Thailand, the Mechanism has been providing technical support in Cambodia and Myanmar through training, validation and installation of drought monitoring systems.** The recent operationalization of the drought monitoring system in Myanmar with technical support from India has significantly improved the former's monitoring capability. The system provides agricultural drought information in terms of prevalence, severity and persistence using moderate resolution data, multiple indices for drought assessment and augmentation of ground data bases.

The Mechanism has provided cutting-edge technology in the form of tools and services to enhance drought risk management and build resilience. With the existing platform, tools, technologies and space-based data, the Mechanism can facilitate the replication of best practices for countries based on demand by developing tailored systems and the building of the institutional capacity through its service nodes in China, India and Thailand. This aims to ensure that governments are continuously using the systems for effective drought risk management. However, replicating these best

practices will also depend on ground in-situ data and on the government's commitment to operationalizing the system to improve the lives of vulnerable communities. To this end, the Mechanism has provided continued support in capacity- building Member States through various thematic training sessions, as well as providing policymakers with information that will enable them to make evidence-based decisions on how and when to prepare for drought. The Mechanism has both strengthened institutional coordination and policies at the country level and has built a strong support network of regional and South-South cooperation.

As a unique regional mechanism, RESAP pulls together regional resources in the form of satellite-derived data, knowledge products, tailored tools, timely service and training network to address sustainable development in a multi-dimensional way. Information/service providers and end users are well connected through the regional cooperation platform to ensure the sustainability of the programme. Under the Regional Drought Mechanism, three regional service nodes, in China, India and Thailand, provided continuous support to drought-prone countries in forging strong institutional partnerships between line ministries through capacity building, knowledge and information sharing. This has helped to integrate drought risk reduction into policy, planning and implementation, thereby strengthening institutional capacities. For example, Myanmar has prioritized drought risk management for improving disaster and climate resilience in the agriculture sector by mainstreaming disaster risk reduction for resilient development¹. The National Action Plan for Disaster Risk Reduction (NAP-DRR) 2014–2018 in Cambodia also highlighted the need to enhance drought early warning capabilities with a focus on improved technologies and community-based dissemination mechanisms.

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Countries/Regions: Cambodia, Mongolia, Myanmar, Sri Lanka

Nominated by: United Nations Economic and Social Commission for Asia and the Pacific- Information and Communications Technology and Disaster Risk Reduction Division (ESCAP-IDD)

Sustainable Development Goal target(s): 1.1, 1.5, 1.a, 1.b, 2.3, 2.4, 11.3, 11.5, 11.b, 13.1, 13.2, 13.3, 13.b, 15.1, 15.3, 15.9

Supported by: China, Fiji, India, Indonesia, Japan, Malaysia, Mongolia, the Republic of Korea, Russian Federation, Sri Lanka, Thailand, Vanuatu, etc. (a total of 25 RESAP member countries)

Implementing entities: ESCAP, Institute of Remote Sensing and Digital Earth (RADI) of Chinese Academy of Sciences; National Remote Sensing Centre (NRSC) of Indian Space Research Organization; Geoinformatics and Space Technology Development Agency of Thailand (GISTDA)

Project status: Ongoing

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URL of the practice: goo.gl/gn88CX; goo.gl/2MERFN