

APDIM Programme (2019-2021)

Overall objective

The strategic objective of the Centre, as outlined by the resolutions, is to reduce losses and damages resulting from natural hazards by developing the capacities and capabilities of the countries and organizations of the region and strengthening regional cooperation on information sharing and management for disaster risk reduction. The Centre would commence its functions and programmes with a focus on the more vulnerable subregions of Asia and the Pacific.

Objectives

- To reduce human losses and material damages and negative impact of natural hazards through enhancement of disaster information management in Asia and the Pacific region;
- To strengthen the capabilities and capacities of the countries and regional organizations in the fields of disaster information management and disaster risk reduction and implementation of the Sendai Framework for Disaster Risk Reduction;
- To contribute to enhancement of regional cooperation and coordination among countries and organizations in the region in the field of disaster information management aiming at socio-economic development of nations and achieving the Sustainable Development Goals.

In line with the resolution 71/11 and Strategic Plan of APDIM, the Centre will focus on the most vulnerable countries of the region; and in conjunction resolution 74/6 will continue supporting member States in the development of disaster-related statistics for Sendai Framework Monitoring using the framework of the UN ISDR. APDIM will actively engage in the existing and evolving disaster information management initiatives and mechanisms in the region and will strive to support and complement these efforts based on its strategy and priorities.

APDIM will actively participate in international and regional events in disaster risk reduction, such as the Asian Ministerial Conference on Disaster Risk Reduction and disseminate information of its activities.

APDIM flagship projects (2019-2021)

(i) Regional Disaster Cloud-based Metadata Platform (Knowledge and information repository)

APDIM strives to bridge the gaps in information and knowledge, and at the same time, help the science-policy interface to deepen the understanding of the complexity of disaster risk and ultimately support evidence-based risk sensitive decision-making. It functions as a regional facility for getting the right information to the right people at the right time; a regional platform as a regional disaster information management system at all levels of use.

The platform is to pool data, information, and statistics on disaster risk including those from emerging sources such as big data and geospatial information, which is available in the public domain and add value for 'actionable' risk-informed decision-making processes. Most of high risk, low capacity countries do have enough capacity for stock piling high-volume datasets from multiple sources and super-computing machines to support disaster risk reduction operations and development of the information management solutions. Alternative way is to develop and provide an open and free cloud-based metadata platform that allows users to access the data, tools and techniques from multiple sources, process them to develop information management products, and open to include their own data sets and create an information repository.

To that end, APDIM in strategic collaboration with the National Cartographic Center of Iran (NCC), Road, Housing and Urban Development Research Centre of Iran (BHRC), International Institute for Earthquake Engineering and Seismology (IIEES), UNDP, Global Centre for Disaster Statistics (GCDS), United

Nations Global Geospatial Information Management (UN-GGIM), UNISDR and other regional partners will work to configure a regional platform as the regional facility and repository of multi-hazard risk information to meet the different needs of decision makers, practitioners as well as the public.

In partnership with UN-ICT Office and other partners including the Pulse Lab Jakarta, APDIM will tap into and, as needed, customize existing and emerging ICT solutions. This includes establishment of data centers both on-premises such as in Tehran and in Incheon, as well as on the cloud. Voice and data network of APDIM will need to be integrated with the UN system, leveraging UN Secretariat ICT services encompassing information security, information management experience, standards.

As the full-scale monitoring of Sendai Framework will get underway in 2020, the need to assist member States accomplishing the national level monitoring and reporting will be one of the main features in the second phase of APDIM. In partnership with UNISDR and other entities, and hand -in-hand with substantive divisions in ESCAP and its regional institutions, APDIM will establish and operate a regional platform for disaster data and statistics to facilitate the identification as well as mechanisms for monitoring and reporting of Sendai Framework.

Along this line, APDIM will establish regional metadata platform. Partly in collaboration with UNDP and the Global Centre for Disaster Statistics, APDIM will put in place a cloud-based metadata platform that will enhance the Sendai Framework monitoring efforts with the pooling of the descriptions and contexts or additional information about disaster data. It is envisioned that this will help member States and other stakeholders better collect, collate, understand, and use data for the monitoring and reporting. Linked to the Cloud-based metadata platform, APDIM will devise decision support tools to capture, organize, and add value to new sources of disaster data and statistics which is available in the public domain to enable the upgrading of data for risk-informed decision-making processes.

Another key element of the regional platform is a regional information and knowledge portal. This will be a gateway to regional disaster risk databases and atlas particularly for cross-border disaster risks that aggregate data from multiple sources leveraging mechanisms for data sharing with other UN agencies (UNGGIM, UNISDR, FAO, WFP, OCHA) and other sources. Cross border hazards such as seismic, sand and dust storm will be at the top priority for the initial phase and gradually to broaden the reach to other hazards such as hydro-meteorological hazards in particular floods and others. Aside from the hazards, such regional portal will also serve as regional electronic library of good practices, knowledge, regional library of GIS and satellite images and solutions.

Finally, APDIM also seeks to complement the implementation of UN-GGIM strategic framework. It will provide the avenue for sharing of toolkits, information products and services including geo-referenced information. APDIM will harnesses geospatial information system that is typically built on the foundation of geospatial and relational database management system, which is optimized for datasets to support the analysis of big data applications for disaster risk reduction for sustainable development.

(ii) Regional disaster information management capacity development

Many Asia-Pacific countries now have state-of-the-art disaster information system, but others have major gaps in data and analysis as well as capacity to develop 'actionable' risk information products and services. Many of the disasters in Asia and the Pacific are complex and transboundary. In this regard, experts recognized the key role that APDIM can play to bridge the gaps in access to information and to enhance institutional capacity.

APDIM key products and services include capacity development in disaster information management and disaster risk reduction. Understanding vulnerability and exposure is a prerequisite for reducing accumulated risk, preventing the creation of new risk, and ultimately strengthening resilience through the development and implementation of appropriate cost-effective D3R measures. Disaster information management needs are qualitatively and quantitatively diverse, concerning a range of stakeholders. Capacity gap, however, constitutes serious challenge that impede access to, and the availability of, disaster information. Member States expressed the need for institutional strengthening through

customized capacity development knowledge sharing and training that allow them to have better access to data and information on hazards, vulnerability and exposure for risk analysis.

Therefore, the focus of the programme in this second phase is to provide capacity development in disaster information management and technical assistance, in part leveraging the accumulation of information and knowledge over the years, the emerging source of information such as big data and geospatial information, and the benefit generated from the partnership and cross-fertilization with partners and counterparts.

APDIM aims to serve as a leading regional hub for capacity development in disaster information management. The thematic priorities will be realized by adopting a networking and partnership strategy through regional and South-South cooperation modalities.

APDIM takes on board the UN GGIM imperatives that imply the need for strengthening institutional arrangements on geospatial information management, to strengthen coordination and coherence in regional geospatial information management. It will enhance member States' capacity to better access the timely and accurate geospatial information by encouraging the setting of standards for national geospatial data infrastructure to support D3R for sustainable development.

APDIM will also collaborate with professional organizations, especially the Global Earthquake Model (GEM), for promoting earthquake risk assessment tools and techniques and organizing capacity development training activities related to seismic risk information management systems and services.

In partnership with ISDR, UNDP, and others, APDIM will complement the Sendai Framework monitoring programmes with institutional strengthening activities to optimize National Platforms for DRR, if exist, to accommodate the national monitor, or develop alternate structures and mechanisms as needed for the monitoring Sendai Framework and the disaster-related indicators of SDGs.

APDIM institutional strengthening strategy entails adopting a multi-track approach, comprising the following: (a) Standardized competence -based training curriculum on disaster information management. This includes executive courses for policy makers and experts as well as specialized regional and national levels on-demand, tailor made, capacity development training to address the operational needs and gaps in information management; (b) E-learning platform and facilities on substantive content in information management in a wide range of topics including for risk identification and assessment such as for earthquake, flood, cyclone, drought, desertification, sand and dust storms; complementary modules for Sendai Framework monitoring; damage and loss assessment in the aftermath of disaster event; recovery and reconstruction; and seismic micro-zonation and spatial land-use planning. Equally important are training modules on standards, structure and mechanisms for disaster information management particularly for high-risk developing member countries; and (c) Regional facility and support for cross-learning among member States and their institutional partners under the South-South cooperation modalities to capitalize on partnership networks at national, regional and global levels.

APDIM will also develop innovative capacity development modules to support emerging areas such as risk-informed investments, impact-based forecasting and risk-informed early warning.

(iii) Regional slow-onset hazards network and alert system (with a focus on sand and dust storm)

A second priority of APDIM is to support ESCAP's regional cooperation mechanism to combat sand and dust storms. The second session of APDIM Governing Council in 2018 endorsed eight strategic recommendations for strengthening the regional cooperation to address the gaps in information and knowledge to reinforce adaptation and mitigation policies and interventions (*See Box 1*). Taking into account these recommendations, APDIM brought out an analytical report entitled –*Sand and dust storm in Asia and the Pacific – opportunities for regional cooperation and action*. The report, launched on the occasion of 74th session of ESCAP Commission in May 2018, outlines the regional cooperation mechanism through a three-pronged approach that consists of 1) addressing the drivers of risk with a multiple-hazard approach, 2) developing an alert system, 3) putting in place the Asia-Pacific sand and dust storm network.

Box 1: Strategic recommendations on SDS endorsed by APDIM Governing Council

- a) Promote, enhance and facilitate integration of a regional multi-hazard risk assessment and alert system, including for sand and dust storms, that would be linked with the Regional Cooperative Mechanism for Drought Monitoring and Early Warning;
- b) Develop and implement projects in partnership with member States and relevant international organizations, including to operationalize data and the knowledge network, including the sand and dust storm monitoring and alert system;
- c) Put in place a multi-stakeholder initiative comprising States, academia, civil society, United Nations specialized agencies and the regional economic commissions, including the Economic and Social Commission for Western Asia, the Economic Commission for Africa, the Economic and Social Commission for Asia and the Pacific and the Economic Commission for Europe, as well as the United Nations Environment Programme, utilizing relevant environmental instruments such as the Sand and Dust Storm Warning Advisory and Assessment System of the World Meteorological Organization, the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, and others, to promote a triangular South-North-South cooperation modality on knowledge- and data sharing and capacity development;
- d) Develop a set of sand and dust storm data indicators and an integrated data bank for empirical and periodic review, assessment, analysis and reporting;
- e) Encourage research and evidence-based studies at national and regional levels on the root causes, hotspots, accelerating factors and negative impacts of sand and dust storms and take appropriate preventive or mitigating measures;
- f) Support awareness-raising and enabling campaigns to provide socioeconomic incentives for local communities to adapt their land and water resources management to the framework of sustainable development;
- g) Identify an appropriate set of standards and indicators to prevent and reduce the impact of sand and dust storms on human health and livelihoods in the affected areas;
- h) Identify and mobilize financial resources and voluntary contributions to support implementation of its activities.

ESCAP Regional cooperation mechanism, aligned with the Sendai Framework for Disaster Risk Reduction, entails scientific assessment of the risk in form of its multi-hazard and transboundary nature on a regular basis, facilitate risk governance through a regional platform of stakeholders, promote investing in resilience by way of promoting adaptation and mitigation measures, and strengthen preparedness for the response with better understanding of the impacts. With primary focus on under-served ESCAP sub-regions - South West and Central Asia, the role of APDIM is to facilitate such cooperation around three main components:

- **Multi-hazard risk assessment:** A multiple-hazard risk assessment and modelling approach will capture the drivers of sand and dust storms, such as land degradation, poor water management, drought, desertification and climate change and their interactions. This approach will be piloted in South, South-West and Central Asia.
- **Alert system:** Given the strong correlation between drought, desertification and sand and dust storms, the tools and techniques being developed under the ESCAP Regional Drought Mechanism and the World Meteorological Organization's Sand and Dust Storms Warning

Advisory and Assessment System will be used to develop an alert system for the semi-arid subregions of South, South-West and Central Asia.

- **Partnerships/network:** Stakeholders involved in combating sand and dust storms will be brought together to form an Asia-Pacific sand and dust storm network. The network will support analytical work, such as periodic risk assessments, provide feedback on the alert system, and develop joint action plans involving both source and impacted countries.

ESCAP's long -standing programme to strengthen regional cooperation for disaster risk reduction and resilience provides the foundation for APDIM work in facilitating action around the three components outlined above to observe, predict, adapt and mitigate the risk of sand and dust storms.

The ESCAP initiative on combating sand and dust storms will be implemented by developing ESCAP partnerships with WMO, UNEP and UNCCD as well as related institutions in member Countries such as China, Mongolia, Republic of Korea, Japan, Islamic Republic of Iran, India, Pakistan, Kazakhstan and Turkey to deliver products and services within the priority regions, such as South-West Asia and Central Asia.