SAARC
SAARC Disaster Management Centre (IU)

NEWS LETTER

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Director's Message

Dear Readers,

We have witnessed unprecedented human and economic impacts of the COVID-19 pandemic. SAARC Member States are taking extreme measures to limit the human cost and economic disruption. It is the most consequential set of public policy and mass behavior change actions most of us have seen in our lifetimes. Further, commendable efforts are also being made to fight against COVID-19 which includes vaccination programs and regional cooperation in sharing resources.

Further, the endless desire of humans to use limited natural resources has brought the globe to the verge of collapse. The impacts of climate change have been quite visible in the region this year, too. There have been events like cyclones- Tauktae & Yaas, gigantic rockslides in Northern Himalayan region, landslides due to heavy rainfall, floods, etc.

This edition of Newletter focuses on various capacity development programs organised with the aim to share good practices amongst each other during these challenging times. The publication has added articles on droughtscape and flood insurance in context of South Asia as it is projected that countries will experience an increase in extreme weather events mainly due to climate change. I sincerely hope you will find the articles in this edition informative, interesting, useful and constructive.

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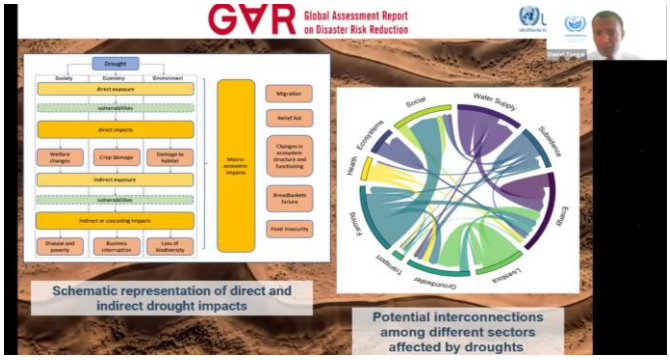
SDMC (IU) conducts webinar on Drought Monitoring & Management using Earth Observation and Weather Forecast Data

SDMC (IU) has organized a webinar on the drought subject in collaboration with UN-SPIDER and IWMI. The objective of the webinar was to discuss advances in earth observation and weather forecast data, approaches and tools to help achieving drought resilience in the Member States. Various global to regional platforms and related tools for monitoring and early warning to guide policy makers in promoting timely drought management measures were also discussed.

The expert from UNCCD, also one of the lead authors of the GAR Special Report on Drought 2021, delivered an opening session on the outcome of the GAR Special Report on Drought 2021. The report recognizes the direct and indirect impacts of drought on society, economy and environment; and potential interconnections among different sectors affected by drought. The report also highlights that drought should be considered as national issue before it thrives. There should be national dialogue and all segment of economy should be part of the drought planning. The GAR report says that 'Drought demands innovation', it cannot be business as usual and it also gives seven calls to action.

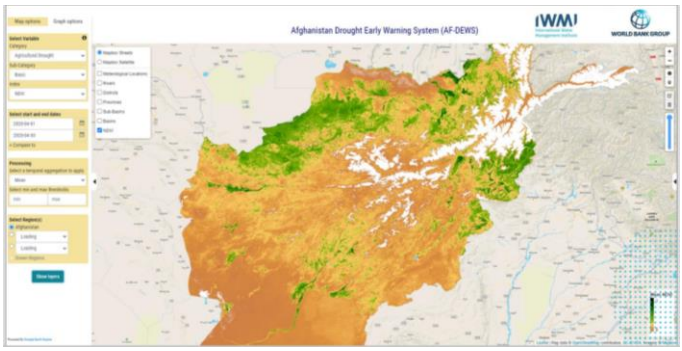


The impacts of drought and potential interconnections among different sectors (Presentation by Dr. Daniel Tsegai, UNCCD)

The expert from UN-SPIDER presented on the learning resources of UN-SPIDER available for the participants. He highlighted that earth observation information is important for drought stock taking, risk & vulnerability assessment, simulations, etc. He gave glimpse of changing river course of River Padma in Bangladesh (NASA image) for period of 2000-2008. The river changing pattern, studied through historical data, holds big impact on irrigation system, water supply, disaster risk or drought management strategy.

Changeable Padma River in Bangladesh, 2000-2008 (Presentation by Dr. Shirish Ravan, UN-SPIDER)

The experts from IWMI highlighted few key points about the droughts like drought management efforts have been reactive, drought impacts are increasing and are complex across sectors, climate change will continue to alter drought pattern, and policy makers need to be convinced that drought preparedness and risk management are worthy of upfront investments. He also discussed on IWMI's Drought Resilience Initiatives, one of them being The South Asia Drought Monitoring System (SADMS) and how it can be leveraged for action and decision making. He gave example of Afghanistan Drought Early Warning Decision Support Tool (AF-DEWS)- a powerful tool that can access open-source satellite data and produce science-based knowledge products to assist decision making.



Snapshot of AF-DEWS
(Presentation by Dr. Giriraj Amarnath, IWMI)

Expert from CRIDA gave a technical presentation on drought management efforts relevant to dryland region. He talked about drought management initiative considering real time management and long-term measures; focus is to work with long term measures for drought proofing.

While sharing individual Member States experience on the subject, some important suggestions were given by countries like Bangladesh and Sri Lanka:

The representative from Bangladesh proposed for a joint research activity with SDMC(IU), UNOOSA and IWMI. He highlighted that longer periodic forecast data has to be applied for preparatory activities for the sectoral aspects. Intense modelling activities and approach is required for addressing drought disaster. A suggestion was also made to issue bulletin/ advisories from SDMC(IU), which would enhance the capacity of the member states.

The representative from Sri Lanka also made a request to prepare disaster forecasting mechanism for SAARC countries.

A total of 58 participants attended the webinar from all SAARC Member States except Nepal.

SDMC (IU) conducts Regional Consultation on the Asia Pacific Action Plan 2021 – 2024 for the implementation of SFDRR

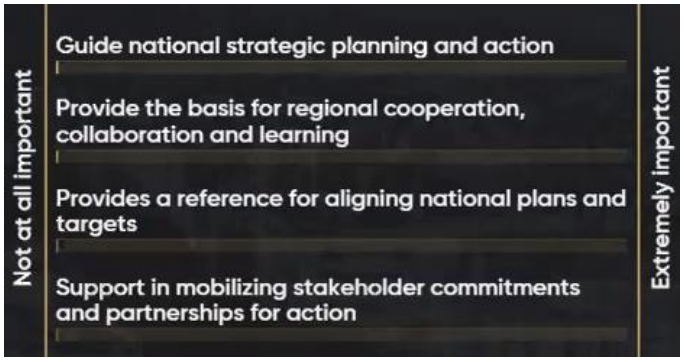
SDMC(IU) has conducted a regional consultation jointly with UN Office for Disaster Risk Reduction (UNDRR) on the Zero Draft of the Asia Pacific Action Plan 2021 – 2024.

The current regional Action Plan (2018-2021) of the Asia Regional Plan for Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 is coming to a close and development of a new action plan this time will bring together Asia and the Pacific dimensions. The Asia-Pacific Action Plan (2021-2024) would acknowledge the increasingly complex and systemic nature of risks with compounding and cascading challenges and impacts, incorporate the lessons from the COVID-19 global crisis to identify pathways from crisis to resilience.

This Action Plan 2021-2024 holds added strategic relevance as it covers 2023, which is the year of the midterm review of the Sendai Framework, as mandated by the United Nations General Assembly.

Director of SDMC(IU) and Chief of UNDRR Regional office for Asia and the Pacific, gave their opening remarks while explaining the relevance of the regional action plan in the scenario of climate change and pandemic. The expert from UNDRR gave an overview of the zero draft of the Asia Pacific Action Plan 2021-2024. The action plan is structured around four priority action areas, each action area is broken down into three parts – regional, national, and local. She conducted a quiz wherein participants were asked following question to vote:

How a regional action plan supports national implementation of the Sendai Framework?



The maximum votes were given to option two i.e. it provides the basis for regional cooperation, collaboration and learning. And also, to option one which says that the regional action plan guides national strategic planning and action.

The participants were divided in two breakout groups for the detailed discussion on the Action Plan. In each group the discussions were held on different Priority Action. The representatives from the Member States provided their feedback and suggestions to be incorporated in the Action Plan.

Towards the closing of the consultation, Chief of UNDRR ROAP briefed on the next steps towards APP DRR forum and APMCDRR 2022. The inputs from the Member States would be consolidated in the new plan and launched in the next APPDRR meeting to be held in December. The plan would serve as an important milestone and the next GPDRR would be held in May next year which will be important opportunity to continue and check the implementation of the plan and enhance it further. GPDRR would be followed by APMCDRR towards the end of 2022 which would be an opportunity to assess the one-year implementation of the plan and progress on the SFDRR.

Director of SDMC(IU) also gave his suggestion during the closing that intergovernmental regional frameworks should be an integral part of Sendai mechanism and have access to the Sendai monitor, so that contribution can be made at regional level and right up to local level.

A total of 17 delegates participated in the webinar from all SAARC Member States from respective National Disaster Management Agencies and relevant ministries, especially those responsible for planning and finance.

Droughtscape in South Asia

Drought Definitions

Given the complex nature of droughts, their definition varies across climatic regions and has traditionally varied across affected sectors and scientific disciplines-
The IPCC defines drought as "a period of abnormally dry weather long enough to cause a serious hydrological imbalance" (IPCC, 2012).
A generic definition of drought was proposed as "an exceptional lack of water compared with normal conditions" (Van Loon et al., 2016).

Droughts typically last from months to a few years, and may be exacerbated by antecedent dry conditions in soil moisture as well as by low reservoir and aquifer levels.

As special cases, extreme and long-lasting "megadroughts" can persist for decades, while so-called "flash droughts" are short periods (usually less than 3 months) of high temperatures and/or strong winds, resulting in increased evapotranspiration and a fast depletion of soil moisture that can lead to major impacts, especially in the agricultural sector.

Not all droughts result in disasters. A drought becomes hazardous when water demands are no longer met and becomes a risk when there is a diminishing capacity to cope with the lack of water. This risk can result in dangerous consequences for people's livelihoods, the economy, ecosystems' health, and even the lives of humans and animals.

Drought in the South Asian Context

A comprehensive review by Naveendra kumar et al. on extreme events in South Asia concluded that droughts have become more 'notable' in South Asia during the recent decades. The most common droughts observed in South Asian countries are due to the variability of amount (i.e., less or absence), onset, and the distribution pattern of rainfall during the primary monsoon season. Apart from the rainfall characteristics, high heat stress, which would cause high evaporation, is also a reason for drought in countries like Bangladesh and Sri Lanka. The processes involved in soil erosion can aggravate the drought conditions like in Bangladesh. The poor soil texture (i.e., low water-holding capacity, high permeability, and infiltration), which percolates more available water at surfaces into deep layers, causes drought in Afghanistan. Even, the persistence of strong wind over inadequate vegetative cover has caused drought, such as the annual drought from April to August in Afghanistan. In the South Asia region, drought impacts predominantly on crop production. Apart from the Maldives, the remaining South Asian countries are agriculture-based countries.

Use of Science & Technology in Drought Monitoring & Assessment

The assessment and monitoring of drought using drought indices are more appropriate than the direct use of hydro-meteorological indicators. More specifically, indicators are hydro-meteorological variables used to define drought situation such as rainfall and temperature. On the other hand, drought indices are obtained by numerically using hydro-meteorological inputs and the drought indicators. The indices intend to estimate the drought state (i.e., severity, spatio-temporal attributes of drought events) for a certain period. The World Meteorological Organization and Global Water Partnership

summarized and provided 50 indices used practically and theoretically in many drought studies. The frequently used drought indices in South Asia can be categorized based on the variables used and grouped into:

(a) hydro-meteorology,
(b) soil water,
(c) remote sensing, and
(d) composite or modelled

Way Forward

Risk governance has been defined as "the totality of actors, rules, conventions, processes and mechanisms concerned with how relevant risk information is collected, analysed and communicated, and management decisions are taken" (IRGC, 2018). It is usually associated with how to enable societies to benefit from change – so-called "upside risk" or opportunity – while minimizing downside risk or losses (UNDRR, 2019). In contrast, systemic risk is usually seen as downside risk. The realization of systemic risk leads to a breakdown, or at least a major dysfunction, of global systems (e.g. the food system). Assessing, communicating and managing – in short, governing – systemic risk is compounded by the potential for losses to cascade across interconnected socioeconomic systems, to cross political borders, to irreversibly breach system boundaries and to impose intolerable burdens on entire countries. Thus, there is an urgent need to enable capabilities for developing and sustaining multi-scalar drought-related resilience and governance by building enabling conditions for the shift to drought-related systemic risk governance.

How a new framework can provide flood insurance guidance to millions of farmers

A blog by Dr. Giriraj Amarnath, Principal Researcher – Disaster Risk Management and Climate Resilience, International Water Management Institute

Maize farmers in India

Floods, storms and droughts dominate the list of disasters that have occurred globally in the last 50 years. Between 1970 and 2019, weather, climate and water hazards accounted for 50% of all disasters, 45% of reported deaths and 74% of all reported economic losses. With climate change increasing risk from water-related hazards, it is imperative to find ways to help people – particularly poor and vulnerable communities – adapt and become more resilient. Insuring smallholder farmers against losses from failed harvests due to floods or droughts provides one way to do this.

Scientists at the International Water Management Institute (IWMI) used satellite technology to develop a low-cost Index-Based Flood Insurance (IBFI) to cover farmers against risk from floods. By analysing historic and contemporary remotely sensed data on locations, depths and durations of floods, they were able to map risk levels and

accurately assess claims for crop losses from inundation. No longer having to make costly field visits to validate claims meant they could keep premiums affordable, even to the poorest farmers. The challenge now is how to make such insurance products more widely available.

IWMI's latest publication, *Scaling up Index-based Flood Insurance (IBFI) for agricultural resilience and flood-proofing livelihoods in developing countries*, provides a framework for a business model for IBFI – or similar product. It outlines the activities, mechanisms and relationships required for (1) providing a good product or service and then (2) selling that product or service. According to the authors, these two modules – aimed at 'creating value' and 'capturing value' – are equally important for the business to succeed, and must continually provide feedback on model performance over time, to inform improvements to product design and marketing.

"We assessed ten organizations' experiences of implementing agricultural insurance products around the world – from micro-scale insurance to safeguard crops from drought in Malawi to macro-scale index-based livestock insurance in Mongolia," explains Avinandan Taron, an IWMI researcher. "From these case studies, we concluded that a public-private partnership – PPI – represents the most effective way to develop, market and scale-up an IBFI product. However, different types of PPI – with differing stakeholders and partnership arrangements – are needed to fulfil the separate product development and marketing functions."

Collaboration between government departments

The findings show that developing a robust satellite-based farming insurance product requires collaboration between government departments responsible for agricultural insurance, research institutes and academics, weather information providers, disaster-management authorities, space-research organizations, insurance companies and reinsurers – plus farmers likely to be affected by weather shocks. Successfully selling the insurance, meanwhile, demands an appropriate marketing strategy and partnerships between: grassroots organizations, such as rural cooperatives and self-help groups with experience of working with farmers; Micro Financial Institutions; and government agencies that can provide financial support and potentially oversee implementation of the insurance program.

People leaving their homes due to floods in Bihar, India

Findings from IWMI's trials of its own IBFI motivated the new report. When the insurance was put to the test during the 2017 and 2018 monsoon seasons in Bihar, India's most flood-prone state, the results indicated that making such insurance schemes available across large rural areas could help bolster farming livelihoods, reduce post-disaster costs for governments and

contribute to reducing poverty, achieving gender equality and safeguarding food security. Between 2017 and 2019, the IBFI scheme supported insurance payouts in India (USD 22,000) and Bangladesh (USD 31,500) to 1,306 out of 2,300 eligible farming households, helping to increase their resilience to floods and minimize their vulnerability to natural hazards.

Boosting penetration rates for agricultural cover

Despite the clear benefits to farmers of receiving insurance, however, penetration rates for agricultural cover remain low. The authors of the *Scaling up* report identify four actions that can help to overcome this challenge. These are: developing an effective communications strategy and disseminating information about insurance schemes and their benefits in accessible ways; ensuring transparency in insurance contracts, and improving procedures for estimating losses, calculating fair compensation, and making timely payouts; strengthening grievance redressal mechanisms; and providing greater financial support at government level, including subsidies to cover insurance premiums.

Efforts to scale up IWMI's IBFI are currently under way. For example, after a trial with IWMI, Indian company Weather Risk Management Services (WRMS) is aiming to insure 25,000 farmers in India in the next 12 months. The trial provided IBFI, along with moisture-tolerant seeds and weather advice, in a two-pronged approach to reducing farmers' risk from flooding. Using the seeds enabled some farmers to still achieve a successful harvest even when rainfall was abnormally heavy or prolonged. And those whose crops were destroyed were able to claim on the insurance. Meanwhile, in Bangladesh, following successful trials of IBFI with IWMI in 2019 and 2020, Green Delta Insurance Company is scaling up its weather-based insurance offerings to cover 100,000 farmers by the end of 2022.

A viable business model

"Trials of our own IBFI product have demonstrated that insurance can help smallholders and their families cope better when faced with water-related hazards, and our *Scaling up* report lays out a viable business-model framework for making such satellite-based insurance products more widely available," says Ravinder Malik, IWMI Emeritus scientist. "As climate change progresses, insuring millions of farmers against risk from weather shocks offers a means to support food security and reduce nations' economic losses."

Visit of H.E. Secretary General of SAARC at SDMC (IU)

H.E. Secretary General of SAARC – Mr. Esala Ruwan Weerakoon along with his spouse and the Director (ETF) - Mr. Chanchal Chand Sarkar, visited Ahmedabad on 10th and 11th of August 2021.

On 11th August, H.E. accompanied by his spouse and Director, first visited the Sabarmati Ashram in Ahmedabad where they learnt about the life of Mahatma Gandhi, Father of the Nation, and his major activities for independence and upliftment of the society. From Sabarmati Ashram, H.E. accompanied by Director, visited SAARC Disaster Management Centre (IU).

Director, SDMC(IU), welcomed H.E. and gave an in-depth presentation on the activities of SDMC(IU). The presentation gave an overview of the set up of SDMC(IU), its functions, human resources, details of the capacity building programmes conducted, and statistics about the participation, etc. Both the portals of SDMC(IU)- the main portal and COVID19 portal were shown to the dignitaries. They were also informed about the other initiatives being taken by SDMC(IU) like the revision of SAARC DRR framework and publication of annual reports, newsletters, etc.

A detailed discussion was held between the H.E. Secretary General of SAARC and Director, SDMC(IU) on these topics. After the presentation and discussions, the dignitaries visited the various facilities available in the campus where they were shown the SDMC(IU) office block, and other facilities in the campus like seminar hall, smart classrooms, residential annexe, urban forest initiative etc. After the campus tour, the dignitaries were taken for the lunch at the GIFT city club along with some of the senior officials from the Government of Gujarat dealing in the subject of Disaster Management. From GIFT city, the dignitaries were taken to the Science city where they visited the Aquatics gallery and the Robotics gallery, recently inaugurated by the Hon. Prime Minister of India.

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