

# ANNUAL REPORT



## SAARC Disaster Management Centre (IU)



# 2021 2022

Gujarat Institute of Disaster Management Campus,  
Village-Raysan, Gandhinagar, Gujarat, India



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Disaster Management Centre (IU)

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Disaster Management Centre (IU)

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# 1. Background

The SAARC region, by virtue of its unique geographical setting, climate and socioeconomic vulnerabilities, is amongst the world's multi-hazard hotspots. The region bears the brunt of large-scale catastrophic disasters. Major population centers such as Kathmandu, Karachi, Kabul, New Delhi, Dhaka lie on key seismic fault lines or along coastal areas constantly buffeted by cyclones, floods, and storm surges. The latter extreme weather events increase in number and intensity due to the effects of climate change. Unplanned human settlements, unsafe building practices, and high population densities have further compounded the exposure and vulnerability of people and economies. As a result, earthquakes, cyclones, floods, tsunamis, droughts, and other hazards of every type and magnitude continue to consume lives, property, and livelihoods across the region. SAARC Disaster Management Centre (SDMC-IU) has been set up at Gujarat Institute of Disaster Management (GIDM) Campus, Gandhinagar, Gujarat, India in November 2016, with a vision to be a Centre of Excellence to provide policy advice, technical support on system development, capacity building services and training for holistic management of disaster risk in the SAARC region. The centre facilitates exchange of information and expertise for effective and efficient management of disaster risk. Eight Member States, i.e. Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka are served by the SDMC (IU).

# 2. Scope of Work

SDMC(IU) is working to give a fillip to regional cooperation for holistic management of disaster risk in the SAARC region. It serves the Member States by providing policy advice, technical support on system development, capacity building services and training. The Centre facilitates exchange of information and expertise for effective and efficient management of disaster risk. As needed, the Centre undertakes projects and programmes to serve the needs of the Member States. It seeks to expand from a 'knowledge sharing' organisation to an 'action-response' organisation and develop Standard Operating Procedures, tools, guidelines and methodologies for different types and phases of disasters.

It is vital for SDMC (IU) to frame cooperation as technical responsibility for regional Disaster Management and Disaster Risk Reduction (DRR) making material contribution to the lives of vulnerable population and those exposed by the natural disasters. The centre is entrusted with the responsibility to support Member States in their DRR initiatives through application of Science & Technology, knowledge from multiple disciplines, exchange of good practices, capacity development, collaborative research and networking in line with the global priorities and goals and other relevant frameworks adopted by Member States.

In addition, the SDMC (IU) has been re-established with an expanded role by merging four erstwhile SAARC Centres namely (1) SAARC Disaster Management Centre (SDMC– New Delhi, India); (2) SAARC Meteorological Research Centre (SMRC - Dhaka, Bangladesh); (3) SAARC Forestry Centre (SFC - Thimphu, Bhutan); (4) SAARC Coastal Zone Management Centre (SCZMC - Male, Maldives). Disaster Risk Reduction relevant functions of these centres are also a part of the scope of work.

### **3. Vision**

To be a Centre of Excellence for regional cooperation and specialised service delivery to Member States for Disaster Risk Reduction (DRR), Response, Recovery and Sustainable Development.

### **4. Mission**

To support Member States in their DRR initiatives through application of Science & Technology, knowledge from multiple disciplines, exchange of good practices, capacity development, collaborative research and networking in line with the global priorities and goals and other relevant frameworks adopted by Member States.

### **5. Functions of SDMC (IU)**

1. Provide assistance in formulation of Policies, Strategies and Sustainable Development Frameworks in relation to disaster Management and Disaster Risk Reduction
2. Undertake/ promote research for better understanding of the various meteorological phenomena of particular interest to the SAARC Region, with a view to enhance the capability of National Meteorological Services (NMSs) of the Member States, particularly

in the field of early warning to provide support for preparedness and management of natural hazards involving relevant knowledge and operational institutions in India.

3. Collect, compile, document and disseminate data, information, case studies, indigenous knowledge and good practices relating to disaster risk reduction, and sustainable development.
4. Compile and collate information for the region required for weather forecasting and monitoring special weather phenomena.
5. Strengthen regional response mechanisms to reduce loss of lives, injuries and to provide timely humanitarian assistance to people affected by disasters.
6. To identify organisations in the region dealing with relevant key focus areas, facilitate interaction, promote coordination and cooperation amongst institutions (ministries, authorities, inter-governmental organisations, international organisations, non-governmental organisations, funding agencies, etc.) and other stakeholders involved through networking for the exchange of experiences, information, data, expertise, knowledge and technology transfer in the key focus areas of SDMC.
7. Organise training workshops, conferences, seminars, lectures for various stakeholders on key priority/focus areas of the Member States and on various aspects of disaster management.
8. Develop educational materials and conduct academic and professional courses on key priority/focus areas.
9. Develop training modules on various aspects of key priority/focus areas and conduct programmes for Training of Trainers including simulation exercises.
10. Coordinate SAADMEx with the Member States.
11. Analyse information, undertake research and disseminate research findings on key priority/focus areas among the Member States.
12. Undertake preparation of databases, publication of journals, research papers and books, and establish and maintain online resource centre in furtherance of the aforesaid objectives.
13. Collaborate with other global, regional and national centres of excellence to achieve synergies in programmes and activities.
14. Conduct studies on assessment and management of disaster risks posing a threat to inclusive and sustainable development in South Asia.
15. Undertake research, projects, programmes contributing towards mitigating the impact of trans-boundary disasters.

16. Facilitate from within and outside the region supply of emergency needs in times of disaster, in line with SAARC disaster response mechanisms.
17. Facilitate exchange of experiences and technical support among Member States on National Action Plans for Disaster Risk Reduction.

## 6. Activities in the Financial Year 2021-2022

### 6.1 Preparation of Activity Plan

SDMC (IU) had prepared its annual Activity Plan for FY 2021-2022 based on the discussion in fifth Inter-Ministerial Meeting and shared with MEA, GoI. Based on the administrative and financial approval received by MEA on July 1, 2021, following capacity building programs/webinars were conducted.

### 6.2 Capacity Building Programs organized

#	Name of Webinar	No of Participants	Presence of the Member States	Date
1.	Drought Monitoring and Management using Earth Observation and Weather Forecast Data	58	Seven Member States (Except Nepal)	7 <sup>th</sup> July 2021
2.	Regional Consultation on Asia-Pacific Action Plan 2021-2024	17	All	15 <sup>th</sup> July 2021
3.	Climate Risk Management in Changing Environment	40	Six Member States (Except Afghanistan & Pakistan)	15 <sup>th</sup> March, 2022

#### Participants

- 115 Participants have been oriented through the Capacity Building Programs

#### Experts

- 12 Experts (5 from SAARC Member States and 7 from International Organisation) have shared their experiences during these capacity development programs

### 6.3 Other Programs

Sl. No.	Activity	Action Taken
1	Dedicated web-portal on COVID-19 for SAARC Region	<ul style="list-style-type: none"> <li>○ SDMC (IU) set up a dedicated web-portal (<a href="http://www.covid19-sdmc.org">http://www.covid19-sdmc.org</a>) on COVID-19 for shared use of SAARC countries. The portal was created with an aim to provide a platform, wherein through active participation, all member countries can disseminate reliable information and updates on the evolving situation relating to COVID-19 in the region, and best practices being followed in member countries. Since the creation of the website, situation report of the region is regularly updated on the portal using data from authentic sources like government/ Ministry websites of member countries and WHO.</li> </ul>
2	Publications	<ul style="list-style-type: none"> <li>○ One volume of the bi-annual <b>Newsletter</b> was published by SDMC (IU) in September 2021 and the second volume is being prepared.</li> <li>○ <b>Annual Report</b> for FY 2020 -21 was prepared and shared with MEA and uploaded on SDMC portal.</li> </ul>
3	Web Portal	<ul style="list-style-type: none"> <li>○ SDMC (IU) updates its portal with all the necessary information/ data on regular basis.</li> <li>○ Country Page for each country has been developed. User Manual for the same has been prepared and shared with all Member States for updation of the country page.</li> </ul>

### 6.4 Activity Briefs

As mentioned above, SDMC (IU) undertook several activities in the FY 2021 – 2022.

A small brief of each activity can be found as Annexures to this report.

Annexure	Topic
1	Webinar on Drought Monitoring & Management using Earth Observation & Weather Forecast Data
2	Regional Consultation on the Asia Pacific Action Plan 2021 – 2024 for the implementation of SFDRR
3	Visit of H.E. Secretary General of SAARC at SDMC (IU)
4	5th South Asian SDG Forum & Policy Dialogue on Regional Cooperation for sustainable development in South Asia
5	Asia-Pacific Partnership for Disaster Risk Reduction (APP-DRR)
6	Webinar on Climate Risk Management in Changing Environment

## 7. Financial Status (Amount in INR)

<b>Total Funds available as on date 1/04/2021</b>	<b>Fund released during FY 2021-22</b>	<b>Expenditure incurred during FY 2021-22</b>
<b>28,08,731.14</b>	<b>51,29,268.00</b>	<b>22,37,931.00</b>

# **ANNEXURES**

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# Annexure 1

Regional Webinar on

## **Drought Monitoring and Management using Earth Observation and Weather Forecast Data**

Program Note

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### Background

The climate variability during the summer monsoon magnifies the frequency and intensity of drought and floods across South Asia which is already facing the heat of the COVID 19 pandemic. Droughts are categorized as slow-onset disasters which are difficult to identify and gradually destroy the areas and affect millions of communities. As per WMO, drought is defined as a prolonged dry period in the natural climate cycle that can occur anywhere in the world. Among weather-related natural hazards, drought is probably the most complex and severe due to its intrinsic nature and wide-ranging and cascading impacts.

In South Asia, drought occurs frequently in arid and semi-arid regions and has affected 1.46 billion people with an economic loss of over 7 billion USD in the last 56 years. Early 2000 onwards, severe droughts affected vast areas of South Asia, including western India, and southern and central Pakistan. The South Asian regions are among the perennially drought-prone regions of the world. India, Pakistan and Sri Lanka have reported droughts at least once in every 3 years in the past five decades, while Bangladesh and Nepal also suffer from frequent droughts.

Inappropriate land use, increasing pressure on natural resources, water scarcity, and climate change scenarios aggravate drought events. Drought events result in loss of livelihood, poverty and food insecurity as agriculture is the major sector impacted. It affects agricultural production, public water supply, energy production, transportation, tourism, human health, biodiversity, natural ecosystems, etc. The related impacts develop slowly, are often indirect and can linger for long times after the end of the drought. While the impacts result in severe economic losses, environmental damage and human suffering, they are generally less visible than the impacts of

other natural hazards (e.g. floods and storms) that cause immediate and structural damages, which are clearly linked to the hazard and quantifiable in economic terms.

While it is impossible to control the occurrence of droughts, the resulting impacts may be mitigated through appropriate surveillance, early warning and management strategies in a drought management plan, wherein, Earth observation based information system plays crucial role.

## **Aim**

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. The event will highlight various global to regional platform and related tools for monitoring and early warning to guide policy makers in promoting timely drought management measures.

## **Targeted Participants**

This webinar engaged Senior Officers from Ministries/Dept. of Agriculture, Water Resources, Meteorology, Climate Change; agencies dealing with application of Remote Sensing & Geospatial technologies; National Disaster Management Organizations (NDMOs) from all the SAARC Member States.

## Agenda

S.No.	Time	Topic	Duration	Speaker	Moderator
1.	13:30 – 14:05	Inauguration of the webinar	35 min	SDMC (IU)	
		Welcome & Introduction of the Director SDMC(IU)	02 mins	Ms. Prashansa, RO-PM, SDMC(IU)	
		Inaugural Address & Introduction of the Speakers	05 mins	Director, SDMC (IU)	
		Opening Remarks	08 min	Director General, IWMI	
		Introductory Remarks by Member States	20 min (2 min each + 4 min moderation)	Representative from each of the SAARC Member States	Director, SDMC(IU)
2.	14:05 – 14:20	Opening Session: Outcome of the GAR Special Report on Drought 2021	10 min	Dr. Daniel Tsegai, UNCCD	Dr. Shirish Ravan, UNSPIDER/UNOOSA
		Discussion	05 min		
3.	14:20 – 15:05	Technical session	45 min		Dr. Shirish Ravan, UNSPIDER/UNOOSA
i.		UN-SPIDER learning resources and advisory services for drought management and response	12 min	Dr. Shirish Ravan, UN-SPIDER/UNOOSA	
		Questions	03 min		
ii.		Earth observation data for drought monitoring and early warning in South Asia	12 min	Dr. Giriraj Amarnath, IWMI	
		Questions	03 min		
iii.		Drought management efforts relevant to dryland region	12 min	Dr. K.V. Rao, CRIDA	
		Questions	03 min		

## Report of Webinar on **Drought Monitoring and Management using Earth Observation and Weather Forecast Data**

### **Introductory Session**

On behalf of the SAARC Disaster Management Centre, Ms. Prashansa Dixit welcomed all the delegates from the SAARC Member States, esteemed resource persons and partners for the webinar.

The keynote address was given by Mr. P.K. Taneja, Director, SDMC (IU). He highlighted the importance of this webinar and welcomed all the dignitaries from the Member States and introduced the resource persons.

**Opening remarks were given by Dr. Mark Smith - Director General, IWMI**



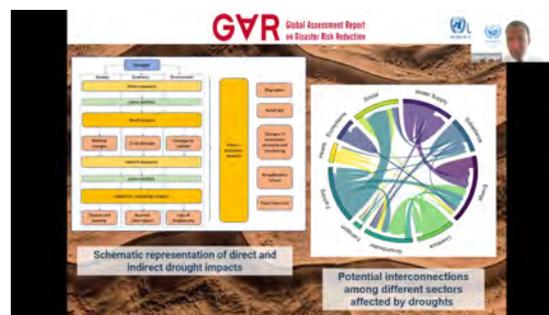
Dr. Mark Smith acknowledged the long-standing partnership of SDMC(IU) with IWMI. He mentioned that this webinar is an opportunity to assist nations in advancing the

drought management system. The region is making progress in use of tools of earth observation and weather forecast data for early and effective response. He also mentioned about Regional Drought Monitoring & Management that IWMI is promoting since 2005 in South Asia, using approaches involving earth observation and modelling tools. IWMI and partners are also developing integrated drought management tools in South Asia.

Representatives from each Member States gave their introductory remarks.

### **Opening Session: Outcome of the GAR Special Report on Drought 2021**

**Dr. Daniel Tsegai, UNCCD**



Dr. Daniel from United Nation Convention to Combat Desertification and also one of the

lead authors of the GAR Special Report on Drought 2021, delivered an opening session on the outcome of the report. He talked about the three main elements of the report- Modernizing current understanding of drought, the lived experience of droughts, and drought risk to resilience- considering drought as systemic risk. The GAR report recognizes the direct and indirect impacts of drought on society, economy and environment; and potential interconnections among different sectors affected by drought like transport, farming, health, groundwater, energy, livestock, etc. The report also highlights that until drought strikes a nation or is not declared as an issue, then it is just managed by one Ministry like water, agriculture, etc. But when drought thrives, it becomes a national issue. It 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.

Dr. Daniel showed drought simulation for four projected warming levels of global temperatures. Drought frequency and severity will likely increase with increase in global temperature. Due to the widespread and cascading impacts - often not explicitly attributed to drought - damage and cost are usually seriously underestimated.

He explained the systemic drought risks- the multi-scale nature of drivers and of institutions affecting food system. Drought is also a core issue in the SDGs, by minimizing impacts of droughts, countries can progress on achieving many of the SDGs.

The GAR report says that ‘Drought demands innovation’, it cannot be business as usual. It requires prospective and proactive measures, improved drought risk assessment and management by enhancing and sustaining the capabilities of communities and individuals.

### **Technical Session 1: UN-SPIDER learning resources and advisory services for drought management and response**

**Dr. Shirish Ravan, UN-SPIDER**



Dr. Ravan 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. Space technology is about earth observation,

satellite meteorology, global navigation satellite systems (GNSS) and satellite communication.

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.

Dr. Ravan further explained the role of UN-SPIDER as capacity builder and its knowledge portal. He discussed the recommended practices on drought monitoring using various index, available on the portal.

## Technical Session 2: Earth observation data for drought monitoring and early warning in South Asia

**Dr. Giriraj Amarnath, IWMI**



Dr. Giriraj mentioned few key points like:

- Past drought management efforts have been reactive.

- Drought impacts are increasing and becoming complex across sectors; they setback development efforts.
- Impact assessments are lacking or there is no consistent methodology.
- Climate change will continue to alter frequency, severity and duration of drought for many regions.
- Policy makers need to be convinced that drought preparedness and risk management are worthy of upfront investments.

He gave an overview of drought statistics in South Asia- EMDAT reported 46 major drought events (1950-2020) impacting 1.4 billion people with economic loss of over 6.9 billion USD. Also there has been lack of robust damage reporting and comprehensive sector wise impact from droughts.

Dr. Giriraj 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. The drought surveillance system provides information on agriculture stress using satellite indices, drought severity maps, digital and dynamic contingency plans, and impact on crops.

He highlighted the importance of short term and sub-seasonal forecast to understand location specific climate risk rather than

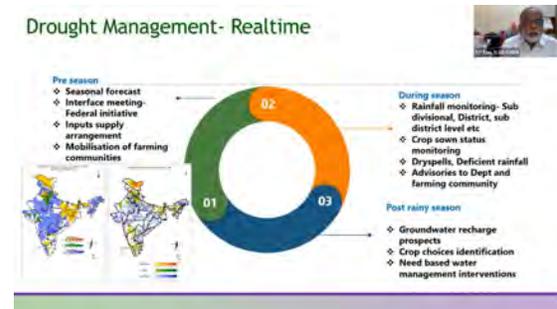
long-range forecast. He further explained the importance of drought early warning system. EWS promotes early/anticipatory action and early finance. With this he gave example of Afghanistan Drought Early Warning Decision Support Tool (AF-DEWS)- it is a powerful tool that can access open-source satellite data and produce science-based knowledge products to assist decision making.

The takeaway message from his session were:

- Strengthen regional drought monitoring and management (e.g. SADMS) as an important step towards proactively enhance drought resilience.
- Efforts to develop robust decision support information products and rapid dissemination among users and importantly able to predict and detect droughts early.
- Integrated drought management requires a collaborative approach within and between levels of government and with the private sector.

### Technical Session 3: Drought management efforts relevant to dryland region

Dr. K V Rao, CRIDA



Dr. K V Rao, took the session on Drought management efforts relevant to dryland region in the specific context of India.

He first gave an overview of rainfed areas and cultivation area, diverse crop cafeteria, characterization by large number of small and marginal farmers, inadequate infrastructure etc. Further he gave details on how rainfed areas are encountering frequent droughts with time scale.

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.

He explained drought with three major points:

- Within the season how do we manage
- End of the season what kind of support that can be given

- For a long-term purpose of drought region what are the decision that can be taken up.

While talking about real time drought management of base country, he explained that, it is being looked up in three ways: Pre monsoon Season, During Season, & Post rainy Season.

For long term measures, for monitoring more in drought prone regions, he presented ideas of ongoing programs of India. Major departments involved and initiatives taken were discussed.

At end of the session, he suggested there are efforts for taking long term measures but what is needed is real time management for farmers as well as the government departments to make use of available tools like space application based indices for drought prone regions. For intervening at the ground level.

### **Experience of using Earth observation for drought management from Member States**

#### **Afghanistan**

Afghanistan shared the use of indices-based approach to assess drought. This has been helpful to understand the severity of drought

in the various provinces of Afghanistan. This has also been useful to assess the effect and impact of drought and thereby plan for relief, mitigation, adaptation and preparedness. The use of AF-DEWS has also been very useful.

#### **Bangladesh**

Bangladesh recognises Drought as a disaster and hence, the standing orders on Disaster emphasises on multi-departmental approach towards its management. The representative emphasised on the need of trans-boundary cooperation on action, but more on research, which is perhaps, the need of the hour. The representative highlighted the geo-climatic variability amongst Member States which would play a major role in contextualising drought management in different countries. Also, longer term forecast models should be worked upon to ensure robust early warnings and impact-based forecasting. A suggestion was made to issue bulletins / advisories in this regard too which would enhance the capacity of the Member States.

#### **Bhutan**

The representative reported about the state of affair in Bhutan, reflecting on the agro-climatic zones and hazards like forest fires.

## **India**

The representative from NDMA, reflected on the drought proneness of India and highlighted the evolution of drought management policies in India, starting from Famine Codes of 1883 to Drought Manual of 2016. India uses a combination of indices across different sectors (hydrological, crop based, soil based etc.) through multiple institutions at different levels to manage drought issues in India. He highlighted the two-trigger mechanism of drought declaration in India. A whole range of initiative of drought mitigation was also presented and emphasis was put on drought response and relief measures too.

Another representative made a brief presentation on the state of affair of drought in different states of India and the different agencies involved. A reference was made on the Crop Watch Group, NADAMS, BHUVAN.

## **Maldives**

*The Member State representative couldn't present.*

## **Nepal**

*No Participant.*

## **Pakistan**

Pakistan presented the bouquet of indices that are used - meteorological, satellite (RS based), hydrological. Emphasis was laid on the use of composite drought index which is an ensemble of different effective indices. A glimpse of drought hazard map was presented along with precipitation-based analyses.

## **Sri Lanka**

The representative gave a brief about the droughts in Sri Lanka and the effects and impacts of those events. Information was given about the monthly bulletins. References were about WFP-PRISM, collaboration with university too. Researches have shown the declining trend of rainfall along with the expressive variability, future climate scenarios and its possible effect on future drought occurrences. An integrated way forward was also proposed highlighting the importance of index-based insurance. A request was made to prepare a disaster forecasting mechanism for SAARC countries.

## Concluding Remarks

Concluding remarks were given by Director, SDMC(IU) and proposals given by Member States (Bangladesh and Sri Lanka) were well noted. Program ended with a vote of thanks by Ms. Prashansa Dixit.



## List of Participants

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## Annexure 2

### **Regional Consultation on the Asia Pacific Action Plan 2021 – 2024 for the implementation of SFDRR**

In collaboration with UNDRR

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SDMC(IU) 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.



# Annexure 3

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

### A Brief Report

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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 10<sup>th</sup> and 11<sup>th</sup> of August 2021.

On 11<sup>th</sup> 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 programs 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.

## Annexure 4

### SDMC (IU)'s Participation in the 5<sup>th</sup> South Asian SDG Forum & in Policy Dialogue on Regional Cooperation for sustainable development in South Asia

#### A Brief Report

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10.11.2021

#### Fifth South Asia Forum on the Sustainable Development Goals Building back better from COVID-19 while accelerating the implementation of the SDGs in South and South-West Asia

15-16 November 2021

The “Fifth South Asian SDG Forum” held in Sri Lanka, on the 15th and 16th of November, 2021. The forum focused on inclusive, resilient and sustainable strategies towards COVID-19 recovery efforts and identify priorities to accelerate the Goals of the 2030 Agenda, with emphasis on climate- and environment- responsive approaches to building back better from the COVID-19 pandemic. The theme of the 2021 SASF was aligned with the theme of the 2022 HLPF and the APFSD, “Building back better from COVID-19” while advancing the full implementation of the 2030 Agenda.

The Forum provided an opportunity to discuss how the South and South-West Asia subregion can cooperate to assess progress on the thematic SDGs for review by the HLPF in 2022, i.e., Goals 4 (Quality education), 5 (Gender equality), 14 (Life below water), 15 (Life on land) and 17 (Partnership for the Goals).

Mr. P. K. Taneja, Director – SAARC Disaster Management Centre (IU), participated in the Policy dialogue on regional cooperation for sustainable development in South Asia, held in Sri Lanka, on the 17th of November, 2021.



While moderating session on ‘Regional Cooperation for addressing Disaster Risks and Building Climate Resilience’, Director-SDMC stressed on the fact that in order to build resilience to disaster risks, the siloed and sectoral approach is insufficient and the interplay between the social-economic-environment aspects of the SDGs needs to be considered.

There is a need to understand the impact of risks, such as through impact-based forecasting, and community level warning systems are important to cope with growing uncertainties.

Director-SDMC also stated that disaster resilient infrastructure requires the development of both hard and soft infrastructure (e.g., managing of internal displacements, social security, etc.) and the leveraging of existing regional cooperation mechanisms, such as the Coalition for Disaster Resilient Infrastructure, International Solar Alliance, One World One Sun One Grid Initiative, is important.

## Annexure 5

### **SDMC (IU)'s Participation in Asia Pacific Partnership for Disaster Risk Reduction (APP-DRR) Forum**

#### **A Brief Report**

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Mr. P. K. Taneja, Director – SAARC Disaster Management Centre (IU), participated in the Asia Pacific Partnership for Disaster Risk Reduction (APP- DRR) Forum, hosted virtually, on the 8th and 9th of December, 2021. The APP-DRR serves as the main consultation forum for the Asia-Pacific Ministerial Conference for DRR (APMCDRR).

Collectively, the APP-DRR and APMCDRR form the regional platform for disaster risk reduction in the Asia-Pacific region. During his virtual address, Director – SDMC stated that we need to strengthen our efforts to understand risk in its true nature and character, through processes and methods incorporating a balance of science, engineering, technology and social dimensions.

The Director also mentioned that reduction of systemic risk needs a transformation of the disaster risk governance machineries of the day and political willingness and leadership is crucial and a key enabler - For example, the digital platform created by SDMC (IU) to serve as an inventory of important information on management of COVID-19 by the SAARC Member States as an outcome of the dialogue amongst the Heads of the SAARC

Countries at the very beginning of Covid-19 pandemic in March 2020. The address concluded with the note that while we strategize to build back better, we need to prioritize community-based, multi-hazard early-warnings which can actually contribute to Targets A to D of Sendai Framework for Disaster Risk Reduction.

# Annexure 6

Regional Webinar on

## Climate Risk Management in Changing Environment

Program Note

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### Context

The 6th Assessment Report, entitled “Climate Change 2021: The Physical Science Basis” from the Intergovernmental Panel on Climate Change (IPCC)’s Working Group 1, draws up a very precise inventory of climate physics, and is the most important source regarding scientific knowledge on climate change around the world. Though already known, but it is now a fact established by science - **human activity is the cause of the atmosphere, oceans, and land warming**. Thus, there is no denying that climate change would function as a Disaster Risk amplifier - the frequency, duration, nature and intensity of extreme weather events are bound to change. This poses a downside risk to sustainable development of communities and countries.

With this report, the IPCC examines for the first time the **regional aspects of climate change**. Because of worsening climate change, the IPCC warns that each region is expected to experience more simultaneous and multiple changes in climate impact factors, even with a global warming of 1.5°C. The South Asian region, with its exponential development, would be more prone to a riskscape of uncertainty, and thus, it is absolutely necessary to understand the plausible effects and impacts of climate change and develop a consensus towards climate action. Climate change impacts stand to slash up to 9% off the South Asian economy every year by the end of this century, and the human and financial toll could be even higher if the damage from floods, droughts and other extreme weather events is included.

*By 2050, the collective economy of six countries—Bangladesh, Bhutan, India, the Maldives, Nepal and Sri Lanka - will lose an average 1.8% of its annual gross domestic product, rising to 8.8% by 2100.*

**- Assessing the Costs of Climate Change and Adaptation in South Asia, ADB**

Research released during the CoP 26 (Conference of Parties) shows that the plans countries have laid out so far for reducing emissions (known as Nationally Determined Contributions or NDCs) still add up to a terrifying 2.4°C of temperature rise by the end of the century. Crossing the 2°C threshold is enough to put over **1 billion people under extreme heat stress; bleach over 99% of coral reefs; double the extinction of plant species and intensify the melting of sea ice in summer by 10 times, fueling up to 6 meters of sea level rise in vulnerable parts of the world.** To this end, SDMC (IU) proposes to organise a webinar to lucidly illustrate the physical basis behind climate change (doing away with the misnomers like weather, climate variability and climate change), help participants visualize the impacts of climate change on various sectors and take stock of the progress of climate action in the countries of the region.

## Objectives

The webinar has been designed to –

1. Help attendees understand the physical basis of climate change and develop a fair understanding of climate risk assessment
2. Illustrate the plausible impacts of climate change on different sectors of importance

## Targeted Participants

This webinar aims to engage Senior Officers from Ministries/Dept. dealing with Sustainable Development, Economic Affairs; National Disaster Management Organizations (NDMOs) from all the SAARC Member States.

## Agenda

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S. No.	Topic	Time	Time Slot	Resource Persons
<b>1.</b>	<b>Inauguration of the Webinar</b>	<b>30 min</b>	<b>13:30 – 14:00</b>	<b>SDMC (IU)</b>
	Welcome & Introduction of the Speakers and about the Webinar	<i>10 min</i>		<b>Director, SDMC (IU)</b>
	Introductory Remarks by Member States	<i>16 min (2 min each)</i>		Representative from each of the SAARC Member States
<b>2.</b>	<b>Technical sessions</b>	<b>120 min</b>	<b>14:00 – 16:00</b>	
a.	Understanding the Physical Basis of Climate Change – <b>The global scenario</b>	20 minutes	<b>14:00 – 14:20</b>	<b>Dr. Govindasamy Bala,</b> IISC Bengaluru
b.	Understanding the Physical Basis of Climate Change – <b>The regional scenario</b>	20 minutes	<b>14:20 – 14:40</b>	<b>Dr. Krishna AchutaRao,</b> IIT Delhi
	Question and Answers	10 minutes	<b>14:40 – 14:50</b>	
c.	Climate Change as Disaster Risk Amplifier – Evidences from the region and Way Forward	30 minutes	<b>14:50 – 15:20</b>	<b>Mr. Sanjaya Bhatia,</b> UNDRR ONEA-GETI
d.	Impact of Climate Change on Sustainable Development Goals in the South Asian Region	30 minutes	<b>15:20 – 15:50</b>	<b>Dr. Sanjay Srivastava &amp; Dr. Madhurima Sarkar-Swaisgood</b> UNESCAP
	Question and Answers	10 minutes	<b>15:50 – 16:00</b>	
<b>3.</b>	<b>Documentation of Climate Action of the Member States</b>	<b>45 min (5 min each)</b>	<b>16:00 – 16:45</b>	Representatives from each of the SAARC Member States <b>Moderator - Director, SDMC (IU)</b>
<b>4.</b>	<b>Wrap up</b>	<b>05 min</b>	<b>16:45 – 16:50</b>	<b>SDMC (IU)</b>

## Relevance of the webinar

Climate change is the single biggest health threat facing humanity, and health professionals worldwide are already responding to the health harms caused by this unfolding crisis. The Intergovernmental Panel on Climate Change (IPCC) has concluded that to avert catastrophic health impacts and prevent millions of climate change-related deaths, the world must limit temperature rise to 1.5°C. Past emissions have already made a certain level of global temperature rise and other changes to the climate inevitable. Global heating of even 1.5°C is not considered safe, however; every additional tenth of a degree of warming will take a serious toll on people's lives and health. Though already known, but it is now a fact established by science - human activity is the cause of the atmosphere, oceans, and land warming. Thus, there is no denying that climate change would function as a Disaster Risk amplifier - the frequency, duration, nature and intensity of extreme weather events are bound to change. This poses a downside risk to sustainable development of communities and countries. While no one is safe from these risks, the people whose health is being harmed first and worst by the climate crisis are the people who contribute least to its causes, and who are least able to protect themselves and their families against it - people in low-income and disadvantaged countries and communities. Climate change is already impacting health in a myriad of ways, including by leading to death and illness from increasingly frequent extreme weather events, such as heatwaves, storms and floods, the disruption of food systems, increases in zoonoses and food-, water- and vector-borne diseases, and mental health issues. Furthermore, climate change is undermining many of the social determinants for good health, such as livelihoods, equality and access to health care and social support structures. These climate-sensitive health risks are disproportionately felt by the most vulnerable and disadvantaged, including women, children, ethnic minorities, poor communities, migrants or displaced persons, older populations, and those with underlying health conditions.

The South Asia region is both a large contributor to climate change and also one of the most vulnerable to climate change. To this end, an attempt was made to organise a webinar in order to lucidly illustrate the physical basis behind climate change (doing away with the misnomers like weather, climate variability and climate change), help participants visualize the impacts of climate

change on various sectors and take stock of the progress of climate action in the SAARC countries of the region.

## 7 Years into the Paris Agreement

Paris Agreement - The landmark accord, which was agreed at COP21, saw rich and poor countries align and come together in an international treaty on climate change to keep global heating to well below 2°C.

No less than 196 countries agreed to the goal of limiting global warming to well below 2°C, preferably to 1.5°C compared to pre-industrial levels, the scientifically advised limit of safety. The Paris Agreement works on a five-year cycle of increasingly ambitious climate action carried out by countries. With seven years already passed when this agreement established a "global stocktake" which revisits the national goals to "update and enhance" them every five years beginning 2023, let's have a look at the successes, the ongoing challenges and what the future holds for this landmark accord.

**Mainstreaming 1.5°C** – The inclusion of 1.5°C as an aspirational limit on global warming was a big victory for the vulnerable island nations and leading environmental NGOs. 1.5°C had previously been dismissed by major powers, but increased reporting on the difference half a degree would make to millions of lives helped to ensure this aspirational target was included. Over the past couple of years, recognition of limiting global heating to 1.5°C is commonplace among many nations and within many businesses.

**Normalising net zero** – Net-zero emissions targets are now commonplace. There is also a powerful movement of net-zero emission targets within the corporate world with businesses often setting more aggressive targets than country-level commitments. Climate science suggests you cannot reach 1.5°C without going carbon neutral. Net zero is a way of conceptualising what 1.5°C means in practice.

**Shift to renewables** – The financing landscape has shifted in favour of clean energy, and many believe that the Paris Agreement sent the signal that renewables and clean technology were a worthwhile and safe investment. This increase reflects the fact that wind turbines and solar panels are now competitive or cheaper than fossil fuel generation in many countries, and that is before

factoring in subsidies.

**Rising emissions** – Despite the landmark commitments made by signatories of the Paris Agreement, emissions have continued to rise globally. The UN Environment Programme (UNEP) reported that emissions rose from 50 billion tonnes in 2015 to 55 billion tonnes in 2019. While carbon output has reduced dramatically in 2020, due mainly to the impact of COVID-19, emissions have only decreased to the level that will be required every single year to achieve the Paris Agreement and that's with transport, industry and commerce almost grinding to a halt during parts of the year. The prospect of a global green recovery from COVID-19 isn't materialising across the board, with some countries pouring money into the fossil fuel economy to stave off a devastating recession.

**Rising fossil fuel production** – Despite the growth in renewables and clean technology, the UN Environment Programme recently reported that nations are planning production increases of 2% a year and G20 countries are giving 50% more COVID-19 recovery funding to fossil fuels than to clean energy.

**Effects are already being felt and by the most vulnerable** – Climate change is affecting every country on every continent. It is disrupting national economies and affecting lives. Weather patterns are changing, sea levels are rising and weather events are becoming more extreme. The populations of countries that have contributed the least to global warming are the most vulnerable to death and diseases brought about by higher temperatures.

## CoP 26: Four big takeaways for South Asia

As COP26 ended with a much-debated final Glasgow Climate Pact, the discussions on progress and implementation are underway. The world did make significant progress in many important areas including an agreement by 130 countries to work together to halt and reverse forest loss and land degradation by 2030, a pledge by major automakers and 30 national governments to phase out internal combustion engines by 2040 worldwide, and approximately 100 countries signing a global pledge to cut methane emissions by 30% by 2030.

**The Rules for Carbon Trading That Were Finalized Will be Positive for South Asian Countries** - Article 6 of the Paris Agreement allows parties to lower abatement costs by working

together in cooperative approaches that create internationally transferred mitigation outcomes. Negotiators finalized the rule for a global carbon finance market that would avoid loopholes and double counting and limited the number of prior credits brought under this framework. Carbon finance will play a critical catalytic role in leveraging private sector finance for flourishing regional power trade between the so-called BBIN countries: Bangladesh, Bhutan, India, and Nepal. The Royal Government of Bhutan is to set up the Bhutan Climate Fund to monetize the carbon credits generated from the export of hydropower to India. Bangladesh and Pakistan have been selected to participate in the Partnership for Market Implementation. A potential area of support from the World Bank could be to help countries develop robust GHG inventories and registries.

**There was no grand bargain on climate finance and this issue is likely to become prominent in COP27 and beyond:** Climate commitments by developing countries have been made in the absence of a grand bargain on concessional climate finance, including but not limited to the \$100 billion that was promised at Copenhagen 12 years ago. There were some promising signs, however, The Glasgow Pact promises to double adaptation finance by 2025 and launches a two-year “Glasgow-Sharm el-Sheikh” work program on the global goal on adaptation. The US signed a statement agreeing to “increase resources” for loss and damage. The UNFCCC’s Adaptation Fund on November 8 raised a record US\$ 356 million in new support from contributing national and regional governments. While this number is minimal relative to the needs, the renewed interest from development partners is encouraging.

**Progress was made on coal and fossil fuel subsidies:** The final Glasgow Climate Pact calls to accelerate the “phase-down” of unabated coal power from plants that don’t use carbon-capture technology . While this is a positive development, it still caused disappointment to those who wanted a commitment to entirely phase-out coal. If the world is to have any chance of keeping overall warming to below 1.5 degrees, then all major power producers must phase out old, high-capacity power plants with lower efficiency and higher emissions and stop any new unabated coal capacity. On the positive side, we must recognize that for the first time in the 27 years of COP discussions a phase-down of coal and a phase-out of fossil fuel subsidies have been mentioned and agreed by all 200 countries. Both Pakistan and Bangladesh have cancelled all coal plants not currently under construction. At the same time, many developing countries continue relying on coal as a cheap and the only secure resource they have in abundance for their critical energy needs.

Coal generates millions of jobs and significant revenues for governments. Reducing dependency on coal will need significant financing, patience, and a phased approach to ensure a just transition for the poor and vulnerable whose livelihood depends directly or indirectly on coal. It is, therefore, significant that India, along with Indonesia, the Philippines, and South Africa, signed up as the first recipients of a multibillion-dollar pilot program aimed at accelerating their transition from coal power to clean energy through the Accelerating Coal Transition program of the Climate Investment Funds.

**India's net zero+ announcements are significant:** India announced not just a 2070 net-zero target but also, perhaps even more significantly, nearer-term targets of 500 GW non-fossil fuel energy, 50 percent of the country's installed capacity through renewables, 45 percent reduction in the carbon intensity of its economy, and a reduction of 1 billion tonnes carbon emissions by 2030. The International Energy Agency's (IEA) landmark India Energy Outlook 2021 projects India to experience the most significant increase in energy demand of any country worldwide over the next 20 years. India has less than half of the world's average per capita emissions. India's development pathway in this decade will be much more critical than its distant net-zero target. This pathway will need to include sectoral green transition strategies for energy, transport, agriculture, water, and urban development with detailed investment plans to be implemented in the next decade. Taking a 'whole-of-government' approach to climate change will be essential so that every government agency and ministry acts on and "owns" the risks and opportunities from climate change.

### South Asia is on the front lines of the Climate Crisis: IPCC

The 6th Assessment Report, entitled "Climate Change 2021: The Physical Science Basis" from the Intergovernmental Panel on Climate Change (IPCC)'s Working Group 1, draws up a very precise inventory of climate physics, and is the most important source regarding scientific knowledge on climate change around the world. Though already known, but it is now a fact established by science - human activity is the cause of the atmosphere, oceans, and land warming. Thus, there is no denying that climate change would function as a Disaster Risk amplifier - the frequency, duration, nature and intensity of extreme weather events are bound to change. This poses a downside risk to sustainable development of communities and countries. With this report, the IPCC examines for the first time the regional aspects of climate change. Because of worsening climate change, the IPCC warns that each

region is expected to experience more simultaneous and multiple changes in climate impact factors, even with a global warming of 1.5°C. The South Asian region, with its exponential development, would be more prone to a riskscape of uncertainty, and thus, it is absolutely necessary to understand the plausible effects and impacts of climate change and develop a consensus towards climate action. Climate change impacts stand to slash up to 9% off the South Asian economy every year by the end of this century, and the human and financial toll could be even higher if the damage from floods, droughts and other extreme weather events is included.

South Asia's climate change vulnerability has long been apparent. Rising sea levels and flooding threaten the coastal states of Bangladesh, India, Pakistan, and Sri Lanka. Landlocked Afghanistan, Bhutan, and Nepal face rising temperatures, drought, and glacial melts. The region is also home to the lowest lying country in the world: the densely populated island nation of the Maldives, which could be submerged in the not-too-distant future. Almost 700 million people—nearly half of South Asia's population—have been affected by at least one climate-related disaster in the last decade, according to the World Bank. India and Pakistan ranked among the 20 countries most affected by climate change in the 21st century in the think tank Germanwatch's 2020 Global Climate Risk Index. A recent McKinsey Global Institute report found climate impacts could rob South Asian countries of up to 13 percent of their GDP by 2050. One of the IPCC report's main messages is there is still time to avert climate catastrophe through stronger mitigation policies. And to their credit, South Asian countries have produced many such policies. But poor monitoring and enforcement and insufficient funding have undermined their efficacy.

## Expert Sessions in the Webinar

The webinar aimed to engage Senior Officers from Ministries/ Dept. dealing with Sustainable Development, Economic Affairs; National Disaster Management Organizations (NDMOs) from the SAARC Member States. The underlying objective for organizing the webinar was to understand the physical basis of climate change and develop a fair understanding of climate risk assessment and illustrate the plausible impacts of climate change on different sectors of importance. The webinar was attended by 40 participants from all SAARC nations except Pakistan.

### **Expert Session 1: Understanding the Physical Basis of Climate Change – The global scenario**

#### **About the Speaker- Dr. G. Bala**

Dr. Bala is currently a Professor at the Center for Atmospheric and Oceanic Sciences, Indian Institute of Science, Bangalore. He received his Ph.D. in atmospheric and oceanic sciences in 1994 from McGill University, Canada. After two years of Post-doc at the Geophysical Fluid Dynamics Laboratory, Princeton University, he served as a “Physicist” (Climate Scientist) at the Lawrence Livermore National Laboratory (LLNL) between 1996 and 2008. Prof. Bala has served as a Lead Author for the 5th and 6th assessment IPCC WG1 reports.

**Session Highlights-** The first session discussed the broader global picture of global warming or climate change including the latest scientific assessment by IPCC. The session highlighted that many recent changes in the climate system are unprecedented in at least the last 2000 years and the regional changes we experience would increase with increased levels of global warming as for every tonne of CO<sub>2</sub> we emit into the atmosphere would add to future global warming.

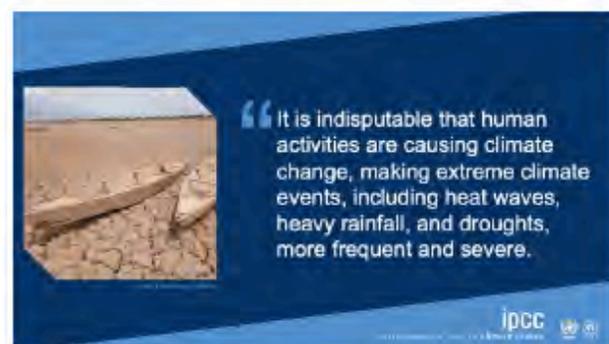
### **Expert Session 2: Understanding the Physical Basis of Climate Change – The regional scenario**

#### **About the Speaker- Dr. Krishna Achuta Rao**

Dr. Krishna Achuta Rao is Professor and Head of the Centre for Atmospheric Sciences at the Indian Institute of Technology Delhi in New Delhi, India. Prior to that he worked at the Lawrence

Livermore National Laboratory in California. Dr. Krishna has been associated with the Intergovernmental Panel on Climate Change (IPCC) since 2001 and was a lead author on the recently released Sixth Assessment Report contribution from Working Group-I. He is currently involved with the United Nations' Ocean Decade "Predicted Ocean" theme.

**Session Highlights-** The second session discussed the South Asian regional scenario of the physical basis of climate change. The session highlighted that the South Asian monsoon has weakened in the second half of the 20th century and the dominant cause of the observed decrease is the anthropogenic aerosol forcing. The session stressed that heatwaves/humid heat stress and extreme precipitation will be intense and frequent during the 21st century.



### **Session 3: Impact of Climate Change on Sustainable Development Goals in the South Asian Region**

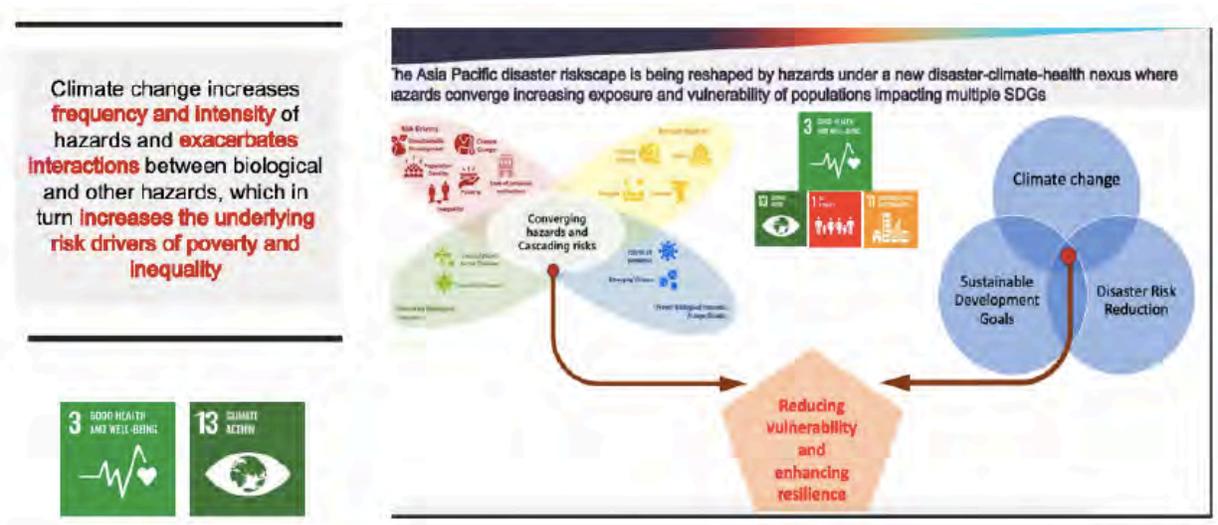
#### **About the Speaker- Dr. Sanjay Srivastava & Dr. Madhurima Sarkar**

Dr. Sanjay K Srivastava is presently Chief of Disaster Risk Reduction at UN Economic and Social Commission for Asia and the Pacific (ESCAP). He is the recipient of ISRO's Team excellence award in 2008-09 for his contributions towards harnessing space technology applications for the benefits of rural poor. He has been a lead author of ESCAP's flagship publication – Asia-Pacific Disaster Report since its inception in 2010.

Dr. Madhurima Sarkar - Swaisgood is the Economics Affairs Officer in Disaster Risk Reduction at the United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP). She has a PhD in Health Communication/Public Health from Florida State University. She was a

Senior Researcher at Nationwide Children’s Hospital and Ohio State University focusing on adolescent health, health communication and health equity.

**Session Highlights-** The third session provided details of the insights provided by the ‘Risk & Resilience portal of UNESCAP’ for the SAARC region. During the session it was brought out that for SAARC countries, total number of Health facilities exposed to cascading risk under Multi-Hazard worst case climate change scenario is 38,370 which is 67% of total health facilities in the region. It was further revealed during the session that for SAARC countries , the total adaptation cost is estimated at \$ 56 billion with \$52.2 billion for adaptation to climate related hazards and \$3 billion for biological hazards and the highest total adaptation cost is recorded for India and Pakistan.



## **Session 4: Climate Change as Disaster Risk Amplifier – Evidences from the region and Way Forward**

### **About the Speaker- Mr. Sanjaya Bhatia**

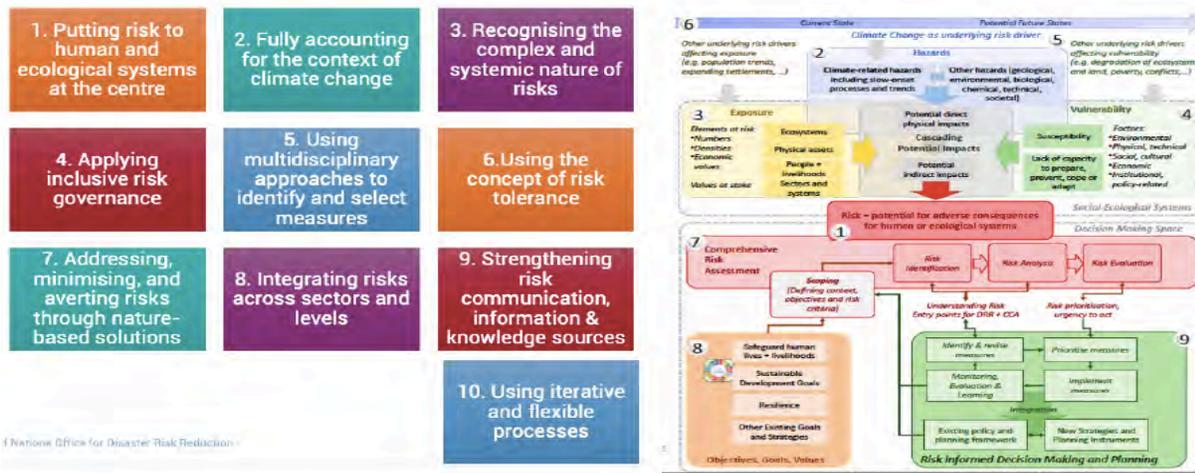
Mr. Sanjaya Bhatia, working as Head of Office, UN Office for Disaster Risk Reduction (UNDRR) Global Education and Training Institute (GETI), where he has guided the training of over 9000 government officials globally. He holds a degree in law and a master's degree in Public Administration from New York University. He has authored a number of publications. He has worked with the Government of India (Indian Administrative Service), the World Bank, and the United Nations in the field of disaster risk reduction and climate change adaptation for over 30 years & has managed projects for mainstreaming of disaster risk reduction and CCA and ex-post recovery in a diverse group of countries including Afghanistan, South Sudan, DPRK, Haiti, Honduras, Panama, El Salvador, Ukraine, Algeria, Ethiopia, Somalia, Georgia, and others.

**Session Highlights-** The fourth session discussed that climate change is increasing disaster impacts, and smart adaptation as a risk management strategy can strengthen resilience to disasters. The session highlighted the fact that disasters undermine climate change adaptive capacity and therefore effective disaster risk management can contribute in achieving adaptation goals. The session ended with an underlying notion that now it is time to shift the paradigm from 'Managing Disaster Risks to Managing Uncertainties'. The session shared some vital reasons to aim for more coherent CCA and DRR approaches, such as:

1. Climate change is driving increasing disaster impacts, and smart adaptation as a CC risk management strategy can strengthen resilience to disasters (hence in Sendai Framework)
2. Disasters undermine CC adaptive capacity, and managing disaster risk can support it (hence in Paris Agreement) and increase vulnerability
3. Both CCA and DRR support achievement of SDGs – and indeed share targets/ indicators
4. Better use of resources: data, expertise and financing
5. NOT striving for coherence presents massive RISK in both DRR and CCA

The session also highlighted ten principles of Climate Risk Management provided by United

Nations Office for Disaster Risk Reduction and a framework for Climate Risk Management listed as follow:



## Session on Country Presentations

**Bangladesh-** Individual country presentation for Bangladesh was given by Dr. Nurun Nahar Joint Chief (Joint Secretary) & Project Director, NRP-PD. The presentation highlights include- Disaster Impact Assessment (DIA) tool and Guideline in National Policy Framework. It was also revealed that following issues have been included in 8th Five Year Plan of Bangladesh:

- Developing DIA Guidelines
- Promote Supply Chain Resilience
- Promote Business Continuity Plan (BCP)
- Develop Industry Sector Risk Profile

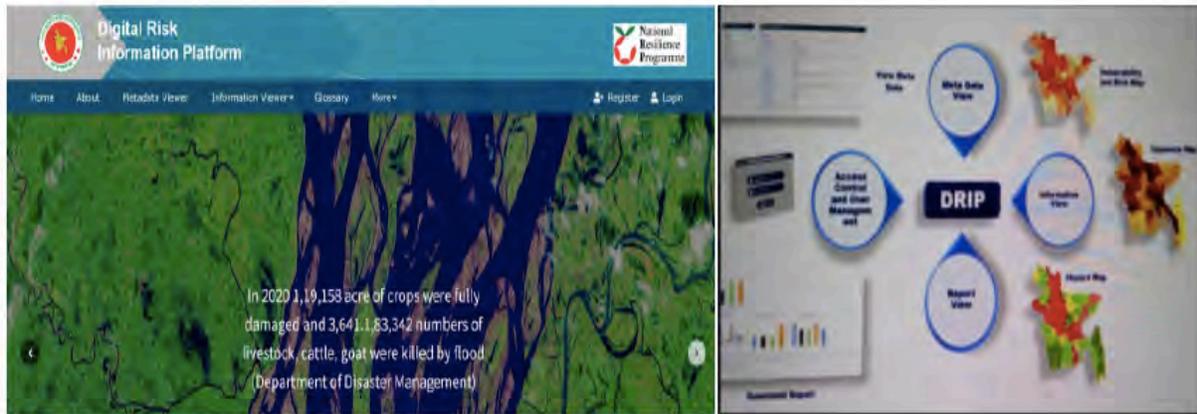
The session also provided details about the Disaster & Climate Risk Information Platform (DRIP) developed by Govt. of Bangladesh. DRIP is a specialized software application for strengthening the country's institutional capacity for mainstreaming disaster and climate risk information into development planning & budgeting, policies and programs. DRIP's objective include:

- Integration of information;

B. Common platform, and

C. Assisting government officials with access and analysis.

D. Report generation



**Bhutan-** Individual country presentation for Bhutan was given by Mr. Dhendrup Tshering. The session highlighted the ways in which Bhutan is drawing the Synergy between climate change and National Priorities & SDGs. The session also provided the details of the progress made by Bhutan in relevant SDGs, mainstreaming Climate Action in Development planning. Regarding progress made in Policy to Support Climate Action following points were illustrated:



**India-** Individual country presentation for India was given by Mr. Ajay Katuri, Consultant-NDMA. The session provided details of the efforts taken by India in order to reduce emission intensity of GDP by 33 to 35% by the year 2030 (below 2005 levels). Further commitments include:

A. Achieving 40% of cumulative electric power installed capacity would be from non-fossil fuel sources by 2030;

B. Creating an additional carbon sink of 2.5 to 3 billion tonnes of CO<sub>2</sub> equivalent through additional forest and tree cover by 2030.

C. India's mitigation strategies have emphasized on clean and efficient energy system, enhanced energy efficiency, resilient urban infrastructure, safe, smart and sustainable green transportation network, planned afforestation etc.

D. India announced schemes to align with its NDC - Swachh Bharat Mission, National Smart Grid Mission and Atal Mission for Rejuvenation and Urban Transformation.

E. Significant leap for renewable energy - one of the world's largest renewable energy expansion programs.

F. India announced International Solar Alliance in COP 25. It currently has 81 member Nations and 102 signatories. G. India has decided to revise the NAPCC in line with the NDCs under the Paris Agreement to make it more comprehensive in terms of priority areas.

While discussing the progress made in Policy to Support Climate Action it was revealed that Prime Minister's Council on Climate Change announced the following 8 missions under the National Climate Action Plan for Climate Change (29 States/UTs have prepared SAPCCs):

1. National Solar Mission
2. National Mission for Enhanced Energy Efficiency
3. National Mission on Sustainable Habitat
4. National Water Mission
5. National Mission for Sustaining Himalayan Ecosystem

6. Green India Mission

7. National Mission for Sustainable Agriculture

8. National Mission on Strategic Knowledge for Climate Change

**Maldives-** Individual country presentation for Maldives was given by Ms. Mariyam Shizna. The session highlighted that in 2011, Maldives announced it had signed the world's first Strategic National Action Plan that integrates disaster risk reduction and climate change adaptation. In 2019, Maldives formulated a Strategic Action Plan 2019-2030, which interrogates climate adaptation and

mitigation into all sectors. Regarding the progress made in policy to support climate action, following efforts taken by Maldives were discussed:

A. Improved coral reef monitoring and conservation; gender and environment sensitive financial support to the growth and professionalization of smaller scale fisheries and agricultural production.

B. Extension of tourism in locally inhabited islands; implementation of Tourism Training program and Fund Small and Medium Enterprises (SMEs): Targeted support to green SME initiatives.

C. Significantly improved health services overall, including regional hospitals and treatment centres; community health workers on all islands; better access to health services.

D. Climate proofing of Housing , e.g., in the context of new housing units for 20,000 families and support to tsunami affected families.

E. Introduction of user pays principle in biodiversity and ecosystem use; increase of protection and management of coral reefs, wetlands and mangroves; introduction of a comprehensive reef restoration and protection mechanism.

F. Introduction of green energy label; 20% increase of renewable energy in the national energy mix; reduction of 40 million litres of fuel used for electricity generation in 2018-2023.

**Nepal-** Individual country presentation for Nepal was given by Ms. Reena Chaudhary, Environment Inspector, NDRRMA. The session highlighted that Nepal's 2016 NDC sets a target to maintain 40% of the total area of the country under forest cover. Current forest cover is

approximately 44.74% of which 4.38% is another wooded land (OWL). The current soil organic matter content of agricultural land is 2%. The number of the organic fertilizer production plant is 23 and number of improved cattle shed is 100,000. Currently, emission standards are not in place for emissions in the brick and cement industries. Currently, 2.1 % of wastewater and less than 1% of the faecal sludge is treated. In the last five years, 90 % of the population has access to electricity, in particular, renewable energy. Of the total hydropower production of 1286 MW, private sector developed hydropower projects contributed 651 MW, a little over half of the total hydropower production in 2019. The cross-border energy trade has covered almost one-third of the total grid electricity. The per capita electricity consumption has increased 260 KWh (NPC, 2020).

Take Urgent action to combat Climate change and its impacts				
	Baseline 2015*	Target 2019*	Progress 2019*	Target 2030*
Integrate Climate measures into national policies, strategies and planning				
Number of Countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change				
a) Local adaptation plan preparation (number of local levels)	4	36	68	
b) Community level adaptation plan	31	231	342	
c) Implementation of adaptation plan	0	15	68	
d) Climate smart villages	0	45	42	
Source: *SDG Status and Roadmap:2016-2030, *SDG Progress Report (2016-2019)				

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Following the Rural Energy Policy of 2006, the adoption of several policies and strategies have provided strong and important frameworks to promote rural energy. Some important among them are:

- A. Renewable Energy Subsidy Policy, 2016,
- B. Renewable Energy Subsidy Delivery Mechanism, 2016,
- C. Biomass Energy Strategy, 2017
- D. National Renewable Energy Framework, 2017,
- E. National Energy Efficiency Strategy, 2018,
- F. Climate Change Policy, 2019.

**Sri Lanka-** Individual country presentation for Sri Lanka was given by Mr. Ruwan Weerasooriya. During the session it was highlighted following Progress was made in Nationally Determined Contributions (NDCs):

- A. First NDCs Submission in 2016.
- B. Updated NDCs submission in 2021 with the 6 Mitigation sectors, 9 Adaptation sector and the Loss and Damage sector.
- C. Established National Steering Committee for NDC implementation.
- D. Established Planning & Monitoring Committees for each sectors.
- E. Implementation & Monitoring Plans for all NDC sectors.

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