



UNCCD COP-14 Special Event: Reducing Drought Risk to improve Land-water Resilience, mainstreaming ecoDRR pathways and tools

Organized by Centre for Excellence on Climate Resilience, National Institute of Disaster Management (Ministry of Home Affairs), New Delhi, jointly with IUCN- Commission of Ecosystem Management (IUCN-CEM, South Asia)



India Pavillion, UNCCD, Auto Expo Mart & Centre, Greater Noida, NCR.
2nd September 2019, 11:00-13:00 hrs

1. Background and Objective of the Session

Drought is a common and most widespread and complex disaster incidences in India that has significant impact on food-water-energy nexus. Nearly 50% of the country is currently facing drought with almost 16% falling in the "exceptional" or "extreme" category. Drought led vulnerability affects resilience and results in loss of ecosystem benefits and services. Continuing drought burden is already depleting ground water resources. Though, famine like condition is not expected, it has a massive impact on the economy. Land degradation especially the process of desertification, salinity ingress, soil erosion, ground water dependent ecosystems and deforestation in changing climate regimes are mega drivers of drought disaster. Precision agriculture, efficient land management, reducing ground water dependence, avoiding flood irrigation and switching to drip irrigation, reduced chemicals and fertilizer usage along with other ecosystem based interventions are key to build resilience.

In this context NIDM in collaboration with IUCN-CEM, South Asia, hosted a side event on the theme of Reducing drought disaster (occurrence, extent and impacts) by promoting mainstreaming of land-water resilience interventions into developmental planning (and actions) at different levels with the aim of controlling or reversing land degradation. The session critically deliberated on the prevailing status of land degradation and drought spread in different parts of India and also across South Asia. UNCCD's principal goal of reducing land degradation by developing and proposing efficient tools and promoting mainstreaming of land-water resilience interventions into developmental planning at different levels with the aim of controlling or reversing land degradation was also discussed in the session. Various success stories of reducing drought incidents and their extent were shared by different speakers and discussants.

2. Agenda for the consultation workshop

The session primarily focused on:

- Increasing severity of drought and key hot spots of drought led land degradation.
- Potential of existing drought risk reduction strategies.
- Develop better understanding of capacity needs.
- Sharing best practices and success stories of reducing drought incidences and extent along with up scaling and out scaling challenges.
- Identifying and exploring resilience pathways and tools to be incorporated into the developmental planning.
- Development of a road-map for achieving SDGs, Paris Climate Agreement, SFDRR, enhancing climate resilience and enhancing farmers ease of living, with lessons towards enabling a "global drought mitigation initiative".

3. Participation

The session had participation of about 80 senior officials from government organizations including CRIDA, IARI, IMD, NDMA, NIDM, CSIR-NEERI, DAC&FW, MNCFC; UN agencies including IUCN & IUCN-CEM; International organizations including GIZ, WHO-India, GGGI; NGOs/ INGOs implementers, and from various research and academic institutions including Delhi University, WII, GB Pant University, BITS-Goa, TERI-SAS, IGNOU, RGIEPT, professional and business organizations, etc.



4. Key Deliberations

<i>Inaugural Session</i>	
<p><i>Context setting and Background</i></p> <p>Dr. Anil K. Gupta</p> <p>Associate Professor and Head- Division of Environment, Climate and Disaster Risk Management, National Institute of Disaster Management</p>	<ul style="list-style-type: none"> • Welcomed all the dignitaries, speakers, discussants and participants. • Mentioned that drought is a complex disaster which is a global, national, sub-national and regional problem which may result in industrial shutdown, food insecurity, employment loss, famine, migration, epidemics, etc. • He discussed about the multi-dimensionality of drought that it can be an agricultural drought, water scarcity and urban drought with emerging urban agriculture practices. • Brief about the role of NIDM towards resilient agriculture and climate resilience: NADMP (National Agriculture Disaster Management Plan) to develop a roadmap towards resilient agriculture and Climate Adaptive planning for Sustainability and Resilience.
<p><i>Welcome Remarks</i></p> <p>Major General Manoj Kumar Bindal, Executive Director, National Institute of Disaster Management</p>	<ul style="list-style-type: none"> • Stated that prolong period of water scarcity, environmental changes, land degradation and depletion of natural resources have aggravated drought occurrence. • Mentioned that 13 states in India are considered as drought prone and desertification, salinity ingress, soil erosion, groundwater depletion, groundwater dependent ecosystem and deforestation are mega drivers of such disaster. • He mentioned some key steps to improve water resilience- precision land management, efficient land management, reducing groundwater dependence, promoting drip irrigation, reduce chemical fertilizer usage.
<i>Technical Session</i>	
<p>Dr. Anil Kumar Singh Secretary, NAAS</p>	<ul style="list-style-type: none"> • Chaired the technical session • Highlighted the issue of land degradation, drought and water scarcity in India.

<p>Dr. VivekSaxena Country Representative, IUCN, India</p>	<ul style="list-style-type: none"> • Chaired the discussion session • Highlighted that nature based solutions to tackle the issue of land degradation, desertification, drought and climate change should be encouraged with the use of best technology.
<p><i>Key Remarks</i> Dr. V. K. Sehgal Professor, IARI Presentation on “<i>Extending Scenario of Drought and its Implication</i>”</p>	<ul style="list-style-type: none"> • Stated that increasing in unpredictability of climatic conditions, abiotic stresses are leading to frequent drought. • He highlighted about causes of drought: meteorological, socio-economic and water management factor, the climate change issues and abiotic stresses on crops. • He talked about the present drought scenario in India and showed the projection of future changes over India. • He stated that drought is not just an environmental issue but also a serious threat to economic development and poverty alleviation. • He concluded with a remark that there is need to strengthen the science based national and sub-national based drought management plans for adaptation and mitigation to meet economic and sustainable development goals.
<p>Dr. G. Ravindra Chary Director, CRIDA Presentation on “<i>Cropping Systems and adaptation for agriculture resilience</i>”</p>	<ul style="list-style-type: none"> • He highlighted the need of resilience in agriculture, how to manage risk (rainfall and agricultural droughts), how to alleviate, overuse of groundwater and reduced groundwater recharge, etc. • He stated that management of available resource is the main option and management of all resources becomes important. • He asserted that system perspective, efficiency measures, priority for systems, governance issues and participatory management needs to be considered for Eco-DRR. • Details about crop alignment as per moisture availability were also shown. • He focused on technologies introduced and demonstrated like short duration/ drought escaping varieties, resilient intercropping systems, crop diversification, in-situ moisture conservation and creating water assets. • He cited that agro-ecology specific potential crops should

	<p>be adopted.</p> <ul style="list-style-type: none"> • He stressed on responsive or anticipatory adaptation and adaptation and resilience at micro level.
<p>Dr. ShaliniDhyani Scientist NEERI & IUCN-CEM, South Asia Chair Presentation on “<i>Nature based solution for climate resilience</i>”</p>	<ul style="list-style-type: none"> • She stated that land degradation is one major issue in South Asia and heavily reliant on weather, climate, land and water for its ability to thrive are making agriculture particularly vulnerable to natural disaster. • She talked about the challenges of drought in anthropocene. She highlighted that intensive agriculture is leading to loss of indigenous crop diversity and land degradation; rehabilitation, restoration and afforestation raising monocultures or invasive. • She focused on nature based solutions which is an approach that puts people and their natural resource use practices at the center of decision making. • She also highlighted about the targets of Eco-DRR i.e., disaster prevention and recovery, hazard mitigation and climate change adaptation using nature based solution. The co-benefits are carbon sequestration, biodiversity conservation, stabilization of regional climate, water and soil protection, heritage and culture and sustainable livelihoods. • She concluded with a way forward note that preference should be given to community needs/ requirements, community livelihood support should be given importance to alleviate poverty and to adopt traditional measures with effective innovative technological inputs.
<p>Dr. Ramesh Krishnamurthy Principal Scientist, WII Presentation on “<i>Role of forests & wildlife in integrated resilience</i>”</p>	<ul style="list-style-type: none"> • He emphasized on global forest watch and land surface temperature as a key indicator in increasing land-water resilience. • He explained that a surrogate model is required to map the biological integrity at large spatial scale. He presented maps of Himachal Pradesh and Arunachal Pradesh and showed how surrogate model is applied and spatial prioritization is done. • He also stated that robust surrogate methods are required for large scale spatial planning and management to enable resilience capacity. • He pointed out that a landscape approach is needed to

	<p>understand the socio ecological linkages and drivers towards integrated landscape management strategies.</p> <ul style="list-style-type: none"> • He concluded citing that land use policy and proper land management are key and it can be taken up from local to national and regional scale.
<p>Dr. Rajiv Chaturvedi Faculty, BITS-Goa Presentation on “<i>Factor sector mitigation: Its synergy with adaptation & drought proofing</i>”</p>	<ul style="list-style-type: none"> • He stressed on the global temperature rise and positioning of forest sector in the Paris agreement. • He highlighted on how trees interface with water cycle (demand-side perspective). • He stated that increased soil infiltration is an important from forest cover restoration because it can lead to higher groundwater recharge and also mentioned that the effect of terrestrial plant restoration on groundwater storage is complex and difficult to quantify. • He suggested that knowledge gaps needs to be addressed in order to improve the capacity to plan restoration projects.
<p>Dr. SanayambiHodam Research Associate, National Institute of Disaster Management Presentation on “<i>NADMP: Towards global drought initiative- CECR-NIDM (National Agriculture Disaster Management Planning)</i>”</p>	<ul style="list-style-type: none"> • Highlighted a brief global and Indian scenario of drought condition. • She stated that Indian agriculture is one of the most disaster affected sector and therefore, a comprehensive plan is needed for this sector. • She presented briefly on the development of national agriculture disaster management plan which will be a descriptive and prescriptive plan. • She mentioned that the plan will cover not only drought but all the disasters that are affecting Indian agriculture

<p>Dr. J. K Garg Emeritus Prof. TERI-SAS</p>	<ul style="list-style-type: none"> • Urged to have a well set approach for landscape restoration and landscape rehabilitation to combat land degradation and desertification.
<p>Dr. M. S. Nathawat Director, Institute of Science, IGNOU</p>	<ul style="list-style-type: none"> • Stated that drought is a slow onset disaster, which is why preparation should be done before it turns into a severe disaster. • Emphasized on the need of land-water auditors at state level, regional level, district level and block level to have a site-specific data in order to disseminate innovative ideas to tackle land degradation, soil erosion and desertification.
<p>Dr. Shibendu S. Ray Director, MNCFC</p>	<ul style="list-style-type: none"> • He suggested using Drought Manual 2019, to develop any strategies for drought management. • The timely maintenance of groundwater data for any type of hydrological study was emphasized. • Urged to promote vulnerability study, soil moisture study with the help of various tools like satellite study or the use of models like SLR and IDRE.
<p>Mr. KritimanAwasthi Sr. Policy Advisor, GIZ</p>	<ul style="list-style-type: none"> • Focused on the importance of area specific ways and long term solutions to tackle issues of land degradation, highlighting the issues faced in LahaulSpiti, Tamil Nadu and Punjab. • Mentioned that in Lahaul, farmers are facing the problem of land degradation due to the loss of soil moisture due to irregular snowfall, rainfall pattern and incidences of cloudburst are washing away the top fertile soil. • He further mentioned that in Tamil Nadu increase in dry or no rainfall and increase in the intensity of rainfall is causing erosion of the topsoil. • He discussed about the increase in water intensive crop cultivation in Punjab, there is a loss of soil moisture and ultimately in the root zone due to reduced surface water and groundwater availability.
<p>Dr. S. D. Attri Dy. Director General, IMD</p>	<ul style="list-style-type: none"> • Stated that due to more climate variability and unpredictability livelihood of farmers are getting affected. • Focused on the protection of soil from flood and drought

	by prior prediction of extreme weather events.
Dr. S Bhanskar Assistant Director General, NRM Division, ICAR, New Delhi	<ul style="list-style-type: none"> • He mainly stressed upon three types of drought- Meteorological drought, Agricultural drought and hydrological drought. • Stated that meteorological drought varies from place to place depending on the area's average rainfall while an agriculture drought becomes a disaster when there is a shortage of fodder, food scarcity and drinking water scarcity. • Focused on the importance of increase in the green cover of India. • He pointed out that the rain gauges that is being used to measure the rainfall data is not sufficient as it may not be accurate.
Dr. IndraniCharashekar Former Adviser , Founding Partner, NitiAayog , ERCCON	<ul style="list-style-type: none"> • Focused on the importance of clarification in the definition of disaster for preparation of any disaster management plan which changes from state to state and district to district. • Emphasized on the importance to consider the financial aspects of compensation and the relief to design any National Disaster Management Plan. • Declared that all the action plans and management plans should be linked with SDG targets.
Dr. Gyan Sharma Delhi University	<ul style="list-style-type: none"> • Talked about the need of hour to respect our nature and strive to protect our ecosystem • Mentioned that it is important for all organizations to converge and work in collaboration so that we can come up with a joint solution.He further mentioned that stakeholder involvement is essential to understand the socio-economic aspects and to conduct any vulnerability assessment. • Focused on the empowerment of stakeholder for any disaster management.
<i>Question & Answer session</i>	<ul style="list-style-type: none"> • Importance of having a clear cut definition of disasters in context with different states was highlighted. • It was mentioned that children and youth plays a major

	<p>role in bringing any positive change.</p>
<p><i>Vote of Thanks</i></p> <p>Dr. SushmaGuleria Assistant Professor, NIDM</p>	<ul style="list-style-type: none"> • Extended valuable thanks and gratitude to the speakers, discussants, participants, NIDM and the session organizers.
<p><i>Key Recommendations</i></p>	<ul style="list-style-type: none"> • The importance of positioning forest and its allied sectors in Paris Agreement, need to be recognized and policy research on this aspect need to be promoted, for reaping greater benefits. • New initiatives of water management system, rainwater harvesting and need of land-water auditors to have site specific data which will help in implementing nature based solutions. • Focus on exchange of case studies and best practices of nature based solutions. • Development and area specific implementation of policies and mapping of degraded land should be given importance. • Importance of having a clear understanding of the definition of disasters for designing of any disaster management plan (with reference to land degradation and land-water resilience). • Importance of national and local strategies for reducing the forestland for non-forestland uses. • Strengthening of institutional mechanism for resilient agriculture and drought risk at national level, e.g. In India it can be a consortium of various organizations and research institutes including NIDM, IUCN, ICAR, ICFRC, IARI, WII, GIZ, etc. • The significance of knowledge sharing and building the response capacity of local communities was emphasized. • The framework of global drought mitigation initiative should be built around a broad understanding of drought comprising of agriculture, forest and ecosystem droughts, water crisis, urban agriculture, peri-urban agriculture, allied services including tourism, food security, nutrition, livelihoods, gender justice, child welfare, marginalized and deprived – vulnerable sections of the societies, and

	<p>with blended use of traditional, local knowledge and modern technologies, and participatory approaches.</p> <ul style="list-style-type: none">• Capacity building including training, research, and education is core component of this initiative and specific modules need to be developed for varying sections of target groups – vertical and horizontal, in government and outside.• Land degradation and drought mitigation issues need to also vouch linkages with health, safety, carbon neutrality and sequestration/adaptation issues as core components of region specific strategies that need to be in sync with global and national priorities set under various other protocols on environment, sustainability and disaster related issues.
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