

Second India Disaster Management Congress

Vigyan Bhavan, New Delhi, 4-6 November 2009

Thematic Session on

Drought

CONCEPT NOTE

A. Introduction

The word drought reminds us about the lack of water, failing crops and non-availability of fodder. Drought, a most complex and least understood natural disaster, is a recurrent climatic phenomenon in several part of the country, which is affecting more people than any other disaster. Drought should not be viewed only as a physical phenomenon or natural event as it results in significant socio-economic and psychological impacts, regardless of level of developments, although the symptom of these impacts tends to differ. Drought is not a temporary phenomenon as seen through our experience, but is long lasting and it cripples and affects the poor and the rural the most. Drought impacts in all agro-climatic regions, but more severally in arid and semi-arid regions. A deficiency in rainfall in a certain period, as measured against the expected average rainfall for the period, causes depletion of both surface and ground water levels, and adversely affects the water supply and agricultural operations. The differences in regional rainfall pattern, human response and resilience, slow-onset, and diverse academic perspective make it difficult to provide a precise definition of drought and meteorologist always find it difficult to predict the drought well in advance to pre-empt drought preparedness.

B. Context

The Indian agriculture virtually linked to the monsoon performance has suffered several onslaughts from recurring droughts. The droughts of 1985, 1986 & 1987, 2000, 2001 & 2002 are recent examples of how potentially severe disasters were successfully tackled through technological and managerial innovations. If such droughts could be predicted in advance some actions might be possible to minimize the disastrous consequences. A whole range of inputs from various scientific departments and organizations may help in meeting this objective.

C. Objectives

The objective of this Thematic Sessions on “Drought” is to discuss about the:

- a) Climatic measures of drought hazard—magnitude, duration, location and timing—that are relevant to the occurrence of drought disasters and assess the degree to which these measures are meaningful at the regional and national scales.
- a) Drought Monitoring, Early Warning & declaration at the National and State levels
- b) Recent developments & initiatives on Drought Relief & mitigation
- c) Case studies / success stories relevant in the context so as to discuss lessons learnt and best practices for adaptation and mitigation options;
- d) Various initiatives by the government, other institutions (NGOs etc) and communities themselves in disaster management especially under changing climate.

D. Sub Themes

Following sub-themes are proposed to be covered in the session under the broad theme of Drought:

- 1) Understanding drought situations at state, national and global level
- 2) Drought Monitoring and Early Warning at the National and State levels
- 3) Drought declarations
- 4) Drought Relief i.e. Contingency Crop Planning, Water Resource Management, employment, Health and Hygiene, Food and Fodder supply etc.
- 5) Drought Mitigation

E. Expected Outcome

The session is expected to bring out a set of recommendations on each of the sub-themes discussed in the session. These recommendations will be collated and presented at the panel discussion at the end of the session.

F. Session Plan

- The Session on Drought would be held for three hours (i.e., on 6th November, 2009).
- The numbers of invited and contributory talks are limited to 4 and 7 respectively.
- Invited talks will have 20 min. duration whereas contributory talks will be of 10 min. duration.
- Session will have a Chair, Co-Chair and a Rapporteur
- Session must bring out 3-4 recommendations
- The recommendations would be submitted to IDMC-II Secretariat for discussion in the concluding session of the Congress.

Tentative Programme

Dr.J.S.Samra
Chairman

Time Slot	Session details
1000-1130	<p><u>SESSION – 1</u></p> <p>Dr. D.K.Chadha, Chair Dr. Suresh Kumar Rohilla, WWF, Co-Chair Prof A.K.Keshari, IIT, Delhi Co-Chair Sh. Rana Chatterjee, CGWB, Rapporteur</p> <p>IT1 : Drought Assessment & Combating through weather based advisory services in India - L.S.Rathore</p> <p>IT-2: Livestock Management in Drought – K.S.Ramachandra</p> <p>CT-1: Drought situation over India – Jagvir Sigh, G.R.Iyengar, T.N.Jha & V.K.Jain</p> <p>CT2 : Rectification of Standardized Precipitation Index Classification for Drought Evaluation in Fars Province (Iran) -Syed Amir Shamsnia & Nader Pirmoradian</p> <p>CT3: Drought management strategies in Agriculture in Andhra Pradesh- D. Raji Reddy and G. Sreenivas</p> <p>CT4: Drought Management : A Case Study of India – Durgesh Nandini</p>
1130-1145	TEA
1145-1300	<p><u>SESSION-2</u></p> <p>Dr. K.D.Sharma, NRA, Chair Prof AL Ramanathan,JNU, Co-Chair Dr. B.R. Neupane, UNESCO, Co-Chair Dr. Y.B.Kaushik, CGWB Rapporteur</p> <p>IT 3 : Monitoring and Early Warning system in drought Management – V.S.Prakash</p> <p>IT 4: Coping drought to enhance agriculture productivity from rainfed regions – G.G.S.N.Rao</p> <p>CT 5 The potential of peer learning between Africa and Asia on Drought as a Development Issue – Aseem Andrews & Yuko Kurauchi</p>

	<p>CT 6: Impact of Drought and Flood on Indian Food Grain Production – Ajay Singh, V.S.Phadke, Anand Patwardhan</p> <p>CT 7: Climatic Changes and forewarning of agricultural drought over western Rajasthan - R. S. Singh, R. K. Mall and A. S. Rao</p>
	<p><u>PANEL DISCUSSION</u> Theme "Drought Risk Mitigation and Management"</p> <p>J.S..Samra, D.K.Chadha, K.D.Sharma, L.S.Rathore, Suresh Kumar Rohilla, B.R. Neupane, K.S.Ramachandra, Santhosh Kumar</p>

Note :

- Invited talks (ITs) will be of 20 min. duration (18 min for presentation +2 min for Q&A) whereas contributory talks (CTs) will be of 10 min. duration (8 min for presentation and 2 min for Q&A).
- A Panel discussion will be held towards the end to facilitate detailed discussion on all aspects of Drought including those which have not been presented in sessions.
- Poster display/presentations will be done during tea/lunch time
- Each session will have two Co-Chairs and a Rapporteur
- Each Session must bring out 3-4 recommendations
- Rapporteurs of each session would collate and prepare a unified list of recommendations and submit to the Chairman-Thematic Session
- Panel discussion would debate on various issues and adopt a set of recommendations
- The recommendations from the Panel discussion would be submitted to IDMC-II Secretariat for discussion in the concluding session of the Congress.

Brief outline of Abstracts (Oral Presentation & Invited talks)

Dr. J.S.Samra, Chairman

Outline the drought affecting the Indian sub continent, its assessment and monitoring status. Will brief his experience of management strategies adopted to face the drought in India, in the past, recurring drought of Bundhelkhand region, for which the management plans are on the anvil etc. Will initiate the discussion on the theme for the session to continue.

1. Drought Assessment & Combating through weather based advisory services – L.S. Rathore

The talk will be on Weather prediction, verification, Medium range weather forecasting to assess drought damages. Will deal on information base for advisory services to help combat drought conditions in India.

2. Livestock Management in Drought – K.S. Ramachandra

The impact of drought on the live stock population, management of cattle in drought condition, strategies for meeting water and fodder requirement, sustaining production and ensuring no loss of fertility and development of drought coping mechanism would be dealt in detail in this talk.

3. Drought situation over India – Jagvir Sigh, G.R.Iyengar, T.N. Jha & V.K. Jain

The study presents an insight on inter-annual and intra-seasonal variability of Southwest Monsoon Season (SYM) rain over sensitive parts of India in recent past ten years. About the Simulations of atmospheric conditions by Numerical Weather Prediction (NWP) Models at National Centre For Medium Range Weather Forecasting and their results about droughts in India in the past decade.

4. Rectification of Standardized Precipitation Index Classification for Drought Evaluation in Fars Province -Syed Amir Shamsnia & Nader Pirmoradian

Drought index is a function consisting of different drought-based environmental factors, resulting as a number at the end. Standardized Precipitation Index is one of the most important indices upon which drought evaluation is achieved with the range of precipitation. Different classifications of Drought of Fars Province, Iran are discussed in this paper.

5. Drought management strategies in Agriculture in Andhra Pradesh - D. Raji Reddy and G. Sreenivas

The drought prone areas of Andhra Pradesh, Causes of drought and its effect on growth and development of crops, their yield is discussed. The drought management through different farm level options and the early warning of drought and finally the reduction in adverse impacts through these measures are discussed.

6. Drought Management : A Case Study of India – Durgesh Nandini

The major objectives of this study is to explore the causes and impacts of drought; analyse the existing drought management system in India; and suggest necessary measures to mitigate the disaster. The joint efforts of citizens, political leaders and administrators and the role of National Rural Employment Guarantee Act (NREGA) and other agricultural and rural schemes to minimize the impact of drought are discussed.

7. Monitoring and Early Warning system in drought Management – V.S.Prakash

The talk will delve around scale at which drought has to be monitored, present status of early warning system in Karnataka and the country as a whole, proposed road map for early warning system in the country, so that the droughts are managed efficiently in future.

8. Coping drought to enhance agriculture productivity from rainfed regions – G.G.S.N.Rao

Approaches for minimizing the damages due to droughts using Information and Communication Technology (ICT) and Decision Support Systems (DSS), for managing drought conditions and their effective utilization with the different stake holders have been discussed. Importance of weather insurance as part of climate risk management in rainfed regions has been highlighted. Need for re look in to the delineation of existing drought prone areas in the country is felt. A separate drought code has been developed and attempts to reclassify the regions made.

9. The potential of peer learning between Africa and Asia on Drought as a Development Issue – Aseem Andrews & Yuko Kurauchi

This paper analyses the potential and challenges in institutionalizing the inter-regional knowledge exchange and peer-learning process between Africa and Asia in the field of drought preparedness, adaptation and impacts mitigations. The paper will provide the decision-makers and practitioners engaged in drought risk management, on how the good practices and lesson learnt could be better communicated and up-scaled to help strengthen capacities at multiple scales in drought-prone areas in the two regions.

10. Impact of Drought and Flood on Indian Food Grain Production – Ajay Singh, V.S. Phadke, Anand Patwardhan

This paper accounts on impact of climate extremes on Indian Food production and area under the food grain. The analysis reveals that impact of drought on Indian Agriculture is more than that of flood. Rabi food grain production depicts better adaptability to drought than kharif food grain production, mostly due to better access to irrigation infrastructure.

11. Climatic Changes and forewarning of agricultural drought over western Rajasthan - R. S. Singh, R. K. Mall and A. S. Rao

The study of time series data has showed that there is an apparent increase in annual rainfall at a linear rate, with respect to entire region, though this change is not uniform at all places. It indicates rising as well as decreasing trend. The probability of occurrence of severe droughts have been studied and using monitoring of cumulative weekly rainfall as an indicator for early warning of agricultural drought is discussed.