SAARC

Disaster Management Centre (IU)

IWMI International Water Management Institute

CGIAR

GUJARAT INSTITUTE OF DISASTER MANAGEMENT
BUILDING RESILIENCE

भाकृअनुप ICAR

UNITED NATIONS Office for Outer Space Affairs

Regional Workshop

on

Assessing Drought Risks using Earth Observation Data

&

Launch of South Asia Drought Management System (SADMS)

Utility of SADMS tool for operational drought decision support across South Asia

Date: 31st August to 2nd September, 2022

Gandhinagar, Gujarat, India

IWMI International Water Management Institute

CGIAR

SAARC Disaster Management Centre (IU)

ICAR

UNITED NATIONS Office for Outer Space Affairs

Session – III Drought Management efforts in South Asia

India

Drought Management efforts in South Asia

Dr VK Singh, Dr KV Rao, Dr JVNS Prasad & Dr SK Bal

ICAR-CRIDA, Hyderabad, India

Management of drought: Current scenario

- Crop Weather Watch Group at Central and State Governments- Monitoring on weekly basis- Multiple agencies involvement
- Relief Commissioners at States play a key role. Gets information from various departments during the season
- Disaster Management Institutes are one of the important set up
- NDRF and SDRF exists-States are supported through federal government assistance
- Mobilization of inputs and transfer to affected areas
- Technical support extended by National Agricultural Research and Education system (NARES) lead by ICAR

Current policies for drought management

Comprehensive guidelines exist for

- ❖ Monitoring &early warning
- ❖ Declaration
- ❖ Response and relief
- ❖ Mitigation

Processes are devised by Federal Government

Drought resilience initiatives across multiple sectors

Initiatives on Drought Management

- Real time Management
- Long term measures

- ❖ Federal Government
- ❖ State Government

Focus is to work with long term measures for drought proofing

During the periods of severe drought, short term measures were implemented to provided sufficient work to water storage infrastructure

Drought resilience initiatives across multiple sectors

Drought Management- Long term measures

Infrastructure development for monitoring- More in drought prone areas

Major programmes

- ❖National Mission for Sustainable Agriculture
- ❖Mahatma Gandhi National Rural Employment Guarantee Scheme
- ❖Pradhan Mantri Krishi Sinchay Yojana (PMKSY)-
  - ❖Accelerated Irrigation Benefit Program- Augmenting Water Storage
  - ❖Integrated Watershed Management program
  - ❖Micro Irrigation

Drought resilience initiatives across multiple sectors

Major departments which are involved include

- Department of Rural Development
- Department of Agriculture and allied departments
- Department of irrigation

Major initiatives include

- Food for work
- Dryland Horticulture
- Micro Irrigation Project
- Rural Livelihoods Program
- Synergy between IWMP and MGNREGA
- Fodder banks program
- Ground water efficient utilization
- River Linking Program

Drought Adaptation Initiatives by states

- Maharashtra- Dryland Agriculture Mission
- AP – Water and Development
- Karnataka- Krishi Bhagya
- Telangana- Mission Kakatiya
- Rajasthan- Mukhya mantri Jala Swabhilamban Program
- Madhya Pradesh- Farm Ponds Program
- Orissa- Initiative on drought management Program

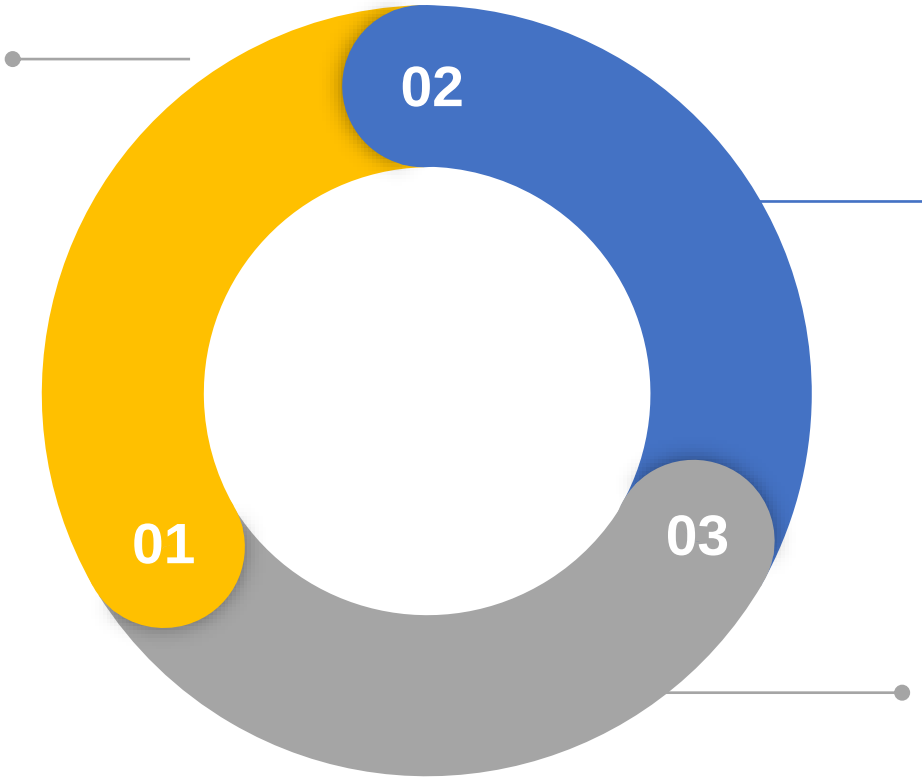
NICRA- National Innovations in Climate Resilient Agriculture- Demonstration of resilient technologies in selected villages

Drought proofing action plans at district level

Drought Management- Realtime

Pre season

- Seasonal forecast
- Interface meeting- Federal initiative
- Inputs supply arrangement
- Mobilisation of farming communities.



During season

- Rainfall monitoring- Sub divisional, District, sub district level etc
- Crop sown status monitoring
- Dryspells, Deficient rainfall
- Advisories to Dept and farming community

Post rainy season

- Groundwater recharge prospects
- Crop choices identification
- Need based water management interventions

Current procedure to declare a drought

- **Responsibility vests with State Governments**

- **Based on rainfall , derived parameters, soil moisture based, hydrology based and RS based parameters**
- **Need to comply with Trigger 1 and Trigger 2**

- **Parameters for Trigger 1: Rainfall related indices: Rainfall Deviation/ SPI and Dryspell**
- **Parameters for Trigger 2 (Impact Indicators):**
  1. **Remote sensing based indices: VCI based on NDVI and NDWI**
  2. **Crop situation related indices: Crop area sown**
  3. **Soil related indices: PASM, MAI,,**
  4. **Hydrology related indices: Reservoir storage index, Groundwater drought index, Surface flow drought index**

- **Any three of four impact indicators can be considered**
- **Early declaration of drought also can be considered by August if Trigger 1 is met and reduction in sown area**

Current procedures & policies to promote timely contingency measures

The District Agricultural Contingency Plans

- Delay in monsoon onset
- Breaks in monsoon leading to early, mid and late-season droughts
- Delayed or limited release of water for irrigation
- Floods
- Unseasonal rains
- Extreme weather events: Heat wave, Cold wave, Frost, Hailstorm, Cyclone

District - **Administrative unit for operationalization** of any action plan

Approach for development:

- ❖ **States make use of these plans**
- ❖ **Interface meeting with state governments**

Bottom-up involving district level scientists of Agricultural Research Stations and KVKs of SAUs

46 State Agricultural Universities (SAUs) and 8 ICAR institutes

Future needs and expectations

- Capacity building- all relevant stakeholders including farming communities
- Funds availability- Monitoring, mitigation (short and long term measures)
- Adaptation of state of the art tools and assimilation of technical inputs
- Customization with state specific data
- Development of protocols for crop specific drought identification
- Real time data availability of RS based parameters
- Forecasting capabilities
- Timely dissemination of information etc

International Water Management Institute

CGIAR

SAARC Disaster Management Centre (IU)

भाकृअनुप ICAR

UNITED NATIONS Office for Outer Space Affairs

Thank you