

South Asia Drought Monitoring System (SADMS)

Priority for Action 1: “Understanding Disaster Risk” Priority for Action 4: “Enhancing disaster preparedness for effective response”



Application field: The International Water Management Institute (IWMI) is supporting the scientific and technical development of SADMS, while the CGIAR Research Program on Water, Land and Ecosystems (WLE), Climate Change, Agriculture and Food Security (CCAFS), World Meteorological Organization (WMO) / Global Water Partnership (GWP) and Ministry of Agriculture, Forestry and Fisheries (MAFF, Japan) supports the initiative in promoting better access and use of operational drought information using multisource satellite data among stakeholders and create a greater coping capacity through improved resource management.

Methodology: The “South Asia Drought Monitoring System” promotes innovative approach of developing integrated drought severity index (IDSI) that combines the satellite-derived inputs ranging from vegetation condition index (VCI), temperature condition index (TCI) and precipitation condition index (PCI), Soil condition index (SCI).

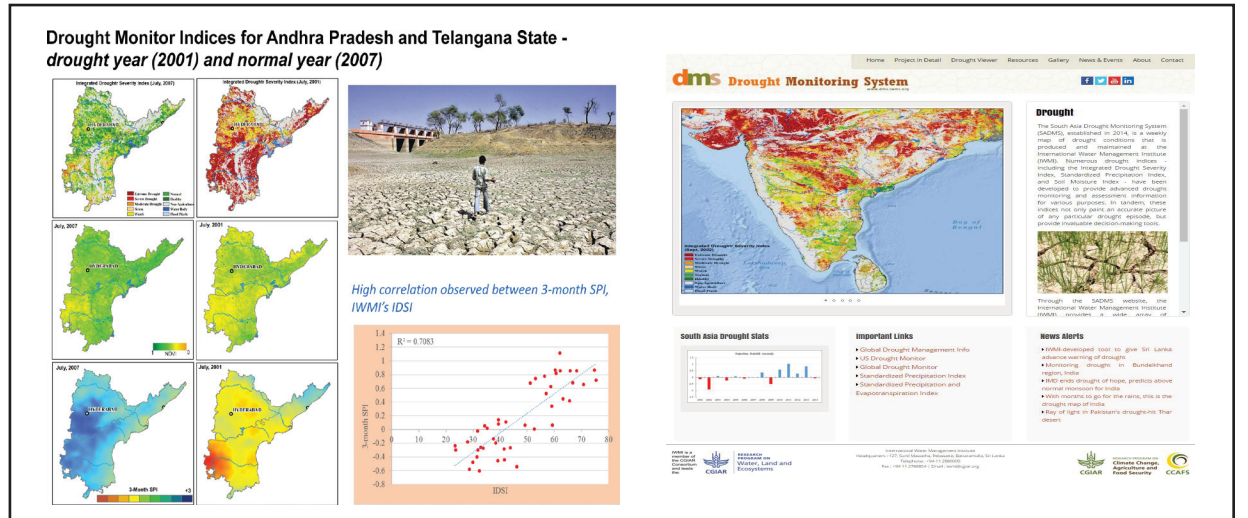
Key results:

- Developed a regional drought monitoring system, and tools to provide near real-time, current drought characteristics, impacts and management plans.
- Increased awareness of the economic and social value added of drought risk management.
- Enhanced technical and managerial capacity at national level to cope with droughts.
- Build national capacity by providing regional training programs/workshops on drought risk management.

Innovative impact: The activity is ongoing. Noteworthy results have been yielded for recent drought events in India and Sri Lanka. In all cases, these results were either achieved collaboratively with, or communicated to, local scientists and stakeholders. Feedback from several local stakeholders confirms the relevance of these results to local decision-making. Further, the science-based policy options and principles allow for enhanced and context specific drought risk mitigation measures. This will also allow south Asian countries to plan for a common strategy on a region to harness the potential, synergize efforts and south-south cooperation.

To build greater resilience to drought, and mitigate its impacts on societies and economies

Regional, National to sub-district Level has been implemented. At Country-level in: Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka



Background: IDSI integrates multi-source remote sensing data from moderate resolution imaging spectroradiometer (MODIS) and tropical rainfall measuring mission (TRMM), ESA Soil Moisture (ASCAT) Products and it synthesizes precipitation deficits, soil thermal stress and vegetation growth status in drought process. Therefore, this method is favourable to monitor the comprehensive drought over South Asia.

Amarnath G., Saiful Islam A.K.M.; Shrestha M.S. (2017). Managing variability: floods and drought. In Bharati, L., Sharma, B. R., & Smakhtin, V. (2016). The Ganges River Basin: Status and challenges in water, environment and livelihoods. London: Routledge. Pp 327.

Smakhtin, Vladimir; Pavelic, Paul; Amarnath, Giriraj; McCartney, Matthew. 2015. Managing water variability, from floods to droughts. New York, NY, USA: UN. Department of Economic and Social Affairs. 3p.

Amarnath Giriraj, Clarke James. (2016). Drought monitoring system helps strengthen resiliency to climate change. World Water Magazine: 14-15., World Environment Publishing, UK.

<http://dms.iwmi.org>

Giriraj Amarnath, Research Group Leader: Water Risks and Disasters, International Water Management Institute (IWMI), Colombo, Sri Lanka

Tel: +94-11-2880000; Email: a.giriraj@cgiar.org