

The CRISP-M tool

Climate Resilience Information System and
Planning Tool for Mahatma Gandhi National
Rural Employment Guarantee Scheme

A top-down and bottom-up approach to help communities make climate-smart decisions and enable them to absorb the effects of climate risks, adapt to climate impacts, and transform their capacities to deal with growing climate impacts



In brief

Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), can strengthen the ability of rural communities to prepare for, cope with, and recover from climate shocks like floods and droughts. Integrating weather and climate information into planning can help MGNREGS to make more climate-smart decisions tailored to specific needs and specific locations, and be based on real-time monitoring.

To assist MGNREGS to amplify the climate resilience impacts of its work, IIED in partnership with Madhya Pradesh Council of Science & Technology (MPCST) co-developed the Climate Resilience Information System and Planning Tool for MGNREGS (CRISP-M). Successfully piloted in 18 village panchayats of Niwali Block in Badwani, Madhya Pradesh, the CRISP-M tool shows the value of combining scientific climate risk information, methods, practices and technology, with community level planning process, traditional knowledge, practices and skills of communities. The next step is for the tool to be scaled up across seven states in India.

MGNREGS provides a safety net by offering 100 days of wage employment to every rural household in exchange for labour on public works projects that support natural resource assets. In the event of a severe drought, MGNREGS can provide an additional 50 days of employment. Integrating climate risk management approaches into planning of wages and assets of MGNREGS can help the scheme realise its climate resilience

potential. The CRISP-M tool aims to help communities realise this potential, and ensure wages are delivered in a timely way to enhance households' coping capacity during climate crisis. It will also contribute to the development of the scheme's climate-resilient infrastructure and management of natural resources, strengthen local institutions, and promote inclusiveness of communities in decision-making.



What is CRISP-M?

CRISP-M is a web and mobile phone based tool. It uses ten Geographic Information System (GIS) layers to map, manage and analyse data to support planning, implementation and monitoring of MGNREGS.

It was co-developed by IIED with Madhya Pradesh Council of Science & Technology (MPCST) for the Ministry of Rural Development (MoRD), Government of India, under the Infrastructure for Climate Resilient Growth (ICRG) programme funded by the Foreign Commonwealth and Development Office.

How does it work?

The CRISP-M tool has three core components:

1. Drought early warning system: This uses near real-time rainfall data, weather forecasts and remote sensing data to provide early warning to MGNREGS officials and communities about the onset of droughts in their initial stages. The tool establishes thresholds at which it indicates that decision makers should trigger drought declaration processes and initiate planning measures for the additional 50 days' wage labour. Community members seeking to minimise imminent losses, or damage to their crops or sources of livelihood, can use the app's recommendations to help shape their decisions on how to manage their assets. The decision-support module is also capable of sending automatic updates to relevant officials and communities to maintain smooth information flows among different stakeholders.

2. GIS-assisted asset planning: The tool integrates ten GIS layers of information, such as land use, topography, contours, geology and ground water prospect, with past and future climate data. This helps ensure that long-term decisions and planning for public works assets—ranging from water conservation structures to forests—take climate risks into consideration. These GIS layers of information

build a fairly accurate digitised picture of conditions on the ground that the community and MGNREGS workers can immediately relate to. In addition, the tool integrates a mobile app that allows a community to modify or update planning based on their local/ traditional knowledge, needs and known local field conditions. It can also help them to identify and prioritise the assets that can strengthen their existing livelihoods or reduce their exposure to climate risks; for example through diversification into agro-forestry, horticulture, sericulture, fisheries, fodder development or livestock-based farming systems.

3. Community based planning and monitoring: To bring in two-way accountability, and move beyond conventional top-down approaches to monitoring and impact assessment, the tool helps build an information system that is crowd-sourced from the impacted community. This enables community members to verify claims on progress, report the actual status of their natural resource management assets, highlight structures needing repair or maintenance, and ensure more equitable sharing of benefits. The app also includes a dashboard feature which uses remote sensing to provide a snapshot of the impact of MGNREGS assets on different bio-physical indicators—such as changes in cropped area, wastelands, forest area and area of water bodies.

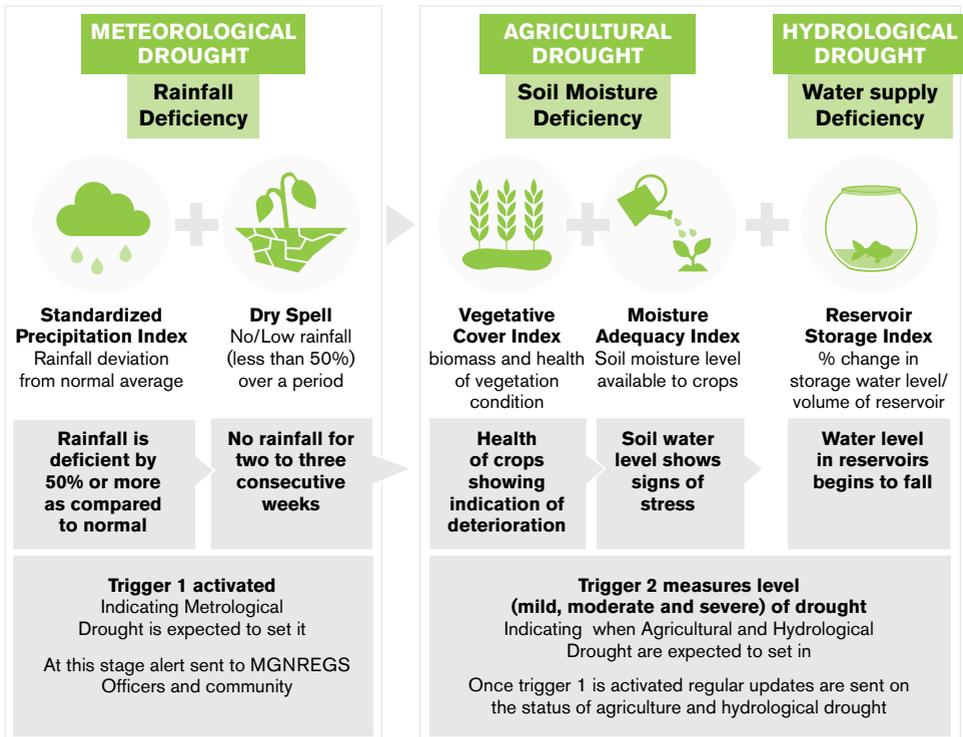
The case for community involvement

MGNREGS can create meaningful climate resilience, but only if it provides opportunities for marginalised and vulnerable sections of the rural community to have a better say in environmental rehabilitation programmes. And not just in their planning and implementation, but also in monitoring and ensuring equitable access to the assets, resources and benefits created through the programmes.

Drought assessment process

Currently it takes a long time to declare a drought in India because of the complex data requirements needed to carry out the drought impact assessment system. One of the CRISP-M tool's central components is a drought monitoring and early warning system

that is designed to help MGNREGS officials to assess the risk of a drought in advance, and to start planning for the provision of the additional 50 days wage employment to rural households during severe droughts. Here is how it works:



A community-based tool

Community participation has been embedded in the CRISP-M mobile app in the following ways:

Participatory Climate Vulnerability Assessment (PCVA)

- Provides information about geo and bio-physical characteristics, and potential climate risks.
- Sets out a process which helps the community to use the information as an input for carrying out a PCVA.
- Assists in identifying areas that need attention and prioritisation in the planning process. For example, lack of fodder for livestock, prompting the need for pasture development; or degraded forests, prompting the need for afforestation.

Community based local planning

- Enables modifications of structures or activities based on local needs and priorities.
- Prioritises structures via a function that allows people to go to the location of each structure, suggest a different one if it better meets their needs, take a photo of conditions around the proposed site, ensure its geo-reference is mapped, and households likely to benefit from the asset or structure are tagged.

Do-it-Yourself water balance tool

- Integrates a Do-it-Yourself water balance tool, which can be used to assess the water yield at a particular location.
- The tool also allows the community to assess insights on past and future hydrological changes due to climate change.
- Based on these inputs the tool suggests structures most suitable in that location, which the community can change based on their local knowledge.

Transparency and Accountability

- Allows community members to add information about existing structures, and beneficiary job card details.
- They can also include photos uploaded with location codes and time/date stamps to show the status of assets created.
- This encourages transparency and accountability in terms of what has been accomplished and who has benefited.

Next steps

The pilot conducted in Badwani, Madhya Pradesh, produced a number of positive results. It equipped community members with asset planning information for more equitable distribution of benefits. It helped to demystify GIS technology and bolstered the self-confidence of the village community by involving them effectively in the planning process. And it took into consideration the interests of the landless, small and marginal farmers by identifying activities for skill enhancement and improving their socio-economic status.

Feedback from the pilot has been used to further refine the tool, which will be deployed in two districts in the next phase of development, and then across seven states in the roll-out phase.

Visit our website

To explore the tool, please visit:
www.CRISP-M.org.

You can find out more about the project here:
<https://www.iied.org/enhancing-climate-resilience-impacts-indias-social-protection-programme>

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