

Adapting to climate change

Not a day or week passes without an extreme event such as a heat wave, high-intensity rainfall leading to floods and landslides, lack of rain or unseasonal rains destroying fruits and vegetable crops, or hurricanes striking coastal areas. Every month in 2023 set a new record for being the hottest on record, and every month of 2024 has already surpassed those records, with the hottest day in history recently recorded. Karnataka has experienced extreme droughts and flood-causing rainfall events in recent months and years. In recent weeks, states from Kerala to Rajasthan to Himachal Pradesh have faced extreme rainfall and flooding.

Recognising the need to understand future changes in climate, their impacts and adaptation strategies, Karnataka has prepared a State Action Plan on Climate Change (SAPCC). The SAPCC was revised under the direction of the Government of India, which provided a structure and outline, and limited financial support. The Environmental Management and Policy Research Institute (EMPRI) in Karnataka led the effort, collaborating with institutions such as Indian Institute of Science, University of Agriculture Sciences, ISEC, CSTEP and TERI. The Action Plan includes detailed information on historical climate trends, climate change projections, impact assessments across sectors such as agriculture, water resources, forests, health, and fisheries, as well as mitigation assessment. It also presents vulnerability ranking of districts, and a set of mitigation and adaptation policies, strategies, institutional and financing arrangements.

A Steering Committee chaired by the Chief Secretary approved the Plan prior to submission to GoI, and the same has been reviewed and approved by the Ministry of Environment, Forests and Climate Change, recently. The science of climate change is evolving at a fast pace, and therefore climate change projections used and impacts assessed in SAPCC may need to be updated. But, the state government departments, research agencies, corporates, municipal corporations, panchayats, and civil society organisations could start designing adaptation plans, as the current knowledge is adequate to formulate and implement adaptation strategies and programmes. Here we suggest a five-point strategy to Karnataka state government to operationalise the State Climate Action Plan, particularly the adaptation component.

State level Institutional Arrangements for Adaptation Planning: A state-level Steering Committee on Climate Change, Chaired by the Chief Secretary is required to guide and coordinate the adaptation planning for Karnataka. To support this effort, Technical Working Groups should be established for key sectors such as agriculture, water resources, health and forests, in the respective departments. These groups should consist of leading scientists and institutions, and include experts from national agencies such as Agriculture Universities, IITM, CRIDA, IARI and ICRISAT, say for agriculture sector. Further, appointment of a dedicated Secretary or Additional Secretary level officer for Climate Change at the state level is needed for coordination and implementation.

Development of District Adaptation Plans: Adaptation to climate change must occur at various levels, including village, panchayat, block and district levels. The initial step involves developing District Adaptation Plans (DAPs), which can later be extended to panchayat and other levels. These plans should incorporate improved climate change projections tailored to the specific scale, assessing the impacts on crops, fisheries, forest types, urban centres, vector borne diseases, and more. The DAPs should also include actionable strategies for sector-specific adaptation. The implementation of these plans can be phased, beginning with three or four most vulnerable and risk-prone districts identified by the SAPCC, followed by other districts. While DAPs are a crucial start, it is essential to refine these plans to the block or even panchayat

level, as reliable climate projections and impact assessments become available. Additionally, DAPs should establish clear targets and timelines for implementing strategies, enabling effective monitoring of progress.

District Adaptation Plan Implementation Strategy: There is a need for climate change cells at the district level to coordinate implementation of DAPs. This cell could be headed by a technical officer, housed at the Deputy Commissioner's office. These cells should work to integrate climate change adaptation into all developmental and infrastructure programmes at the district level. To support this, a cadre of climate experts needs to be developed, initially by identifying and training existing officers in the districts.

Financing of the adaptation plans: Many ongoing programmes, such as Watershed Management Programme, MGNREGS, Crop Insurance, Prime Minister's Krishi Sanchaye Yojana, and major and minor irrigation schemes, do contribute to building resilience to climate risks. However, there is a need for dedicated funding for climate-resilient crop, water, nutrient, and pest management, urban flood management, sustained water supply for irrigation and household use, and the maintenance of irrigation canals and urban drainage systems, etc. To support these efforts, state government development departments should enhance budget allocations and seek additional funding from national and international sources. Unfortunately, financial support from the GoI is limited, making it necessary to develop strategies to mainstream climate change adaptation into ongoing development and infrastructure programmes. The state government could support implementation of DAPs in three most-vulnerable districts as pilots.

Continuous revision of Climate Action Plan with the latest science: Assessment of climate change impacts made in the SAPCC are preliminary, due to limited resources and time. Since new climate model-based projections are available, along with improved impact models, there is a need for revising the impact assessments for different sectors at district levels. The state technical working groups in specific departments could help continuously revise, update and improve the scientific basis of climate action, including climate change projections, impact assessments and adaptation strategies at district levels.

Climate change is both an immediate crisis and a long-term concern, with significant consequences on health, biodiversity, water availability, food production, coastal infrastructure, and rural and urban habitats. While the science continues to evolve, what we already know is enough to take decisive action. Climate change is one of the innumerable challenges facing state governments. Can the Karnataka government take climate concerns seriously, to help the state cope with its adverse impacts and provide leadership for the rest of the country?

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