



Madhya Pradesh State Action Plan on Climate Change

Sector Policy Brief: FORESTS AND BIODIVERSITY

Madhya Pradesh is richly endowed with forested lands. Over 30% or about 95,000 square kilometres of the State is forested, 12% of the national total. The forests host nine national parks, 25 wildlife sanctuaries, two biosphere reserves and five tiger reserves. The forests also shelter a vast array of biodiversity, including important tree species, such as teak, sal, saja and tendu, and wildlife like tiger, bison and wild boar. Twenty percent of the State's tribal population live in the forests and depend on them for their livelihoods, particularly from non-forest timber products like fruits, seeds, medicinal plants, gums and resins. Despite intensified fire surveillance and other efforts by the State to protect the forests, they are under significant pressure, due to heavy local dependence on fuelwood, overgrazing by livestock, unsustainable extraction of forest products and unregulated conversion of forest to agricultural lands.

What does climate change mean for forests and biodiversity?

An assessment of the impact of climate change on forest ecosystems in Madhya Pradesh indicates that, in the short-term, about 23% of the State's forested area could be affected; over the longer term, nearly 50% could be impacted. The changing climate in Madhya Pradesh is likely to affect the composition and distribution of its forests. This could take a heavy toll on forest biodiversity and the availability of forest resources, such as fuelwood, fodder and non-timber forest products, all of which are critically important to the livelihoods of local communities. In addition,

climate change may lead to increased migration and conflicts between forest dwellers and wild animals over suitable habitats, as the animals search for water and more favourable environments.

Rising temperatures and an increase in extreme weather events increases the vulnerability of indigenous species to invasive plant and animal species due to resource scarcity and increased competition. Longer dry spells in forested areas may trigger frequent and intense forest fires. Drought and fire can stress trees and make them more vulnerable to attacks by insects and diseases. Higher temperatures and consequent dry spells may also increase desertification in western Madhya Pradesh, which, in turn, may result in biodiversity losses and affect the economy of the area.

Adaptation and mitigation strategies set out in the SAPCC

The Madhya Pradesh State Action Plan on Climate Change foresees a number of adaptation strategies for the forestry sector. The key strategies are to:

- ▶ Develop and implement forest management (working) plans that are tailored to address the biophysical vulnerabilities of different types of forest ecosystems. Putting into place a network of sample and yield plots will provide baseline information on the state of forest resources and is a mechanism for monitoring changes to forest and vegetation conditions over the long term. Establishing preservation plots in a range of forest types could help to conserve the forests while, at the same time, allowing any changes in forest composition and biodiversity to be monitored. All of these approaches may support the development of sustainable forest management plans.
- ▶ Map existing forest boundaries – an urgent task, given the vulnerability of the forested areas in Madhya Pradesh to encroachment. Corridors linking national parks and state sanctuaries need to be established and mapped to protect wildlife and moderate forest fragmentation in protected areas. Other models for enhancing forest conservation, afforestation and reforestation should be tested and trialed.
- ▶ Prioritise soil and water conservation in forest management strategies. The role of forests in protecting biodiversity and providing a sustainable supply of clean water needs to be better factored into efforts to meet the challenges posed by climate change. Catchment areas, where water is collected by the natural landscape, eventually flowing into a body of water or into the groundwater system, need to be managed and protected as a high priority. Watershed management programmes that include silvipasture development should be undertaken in forest fringe areas. Water harvesting and storage structures should be created in forest areas.
- ▶ Research the likely impact of climate change on forested areas and forest-based ecosystem services, such as carbon sequestration. Existing community forest conservation initiatives – including the detection and management of forest fires – should be documented and replicated throughout the State.
- ▶ Build the capacity of forest managers, officers and workers to appreciate the implications of climate change for forest ecosystems. Capacity building should emphasise the impact of climate change on forest growth, carbon sequestration and productivity. Training should be provided to enable communities to participate and benefit from programmes relating to social forestry, water conservation and markets.

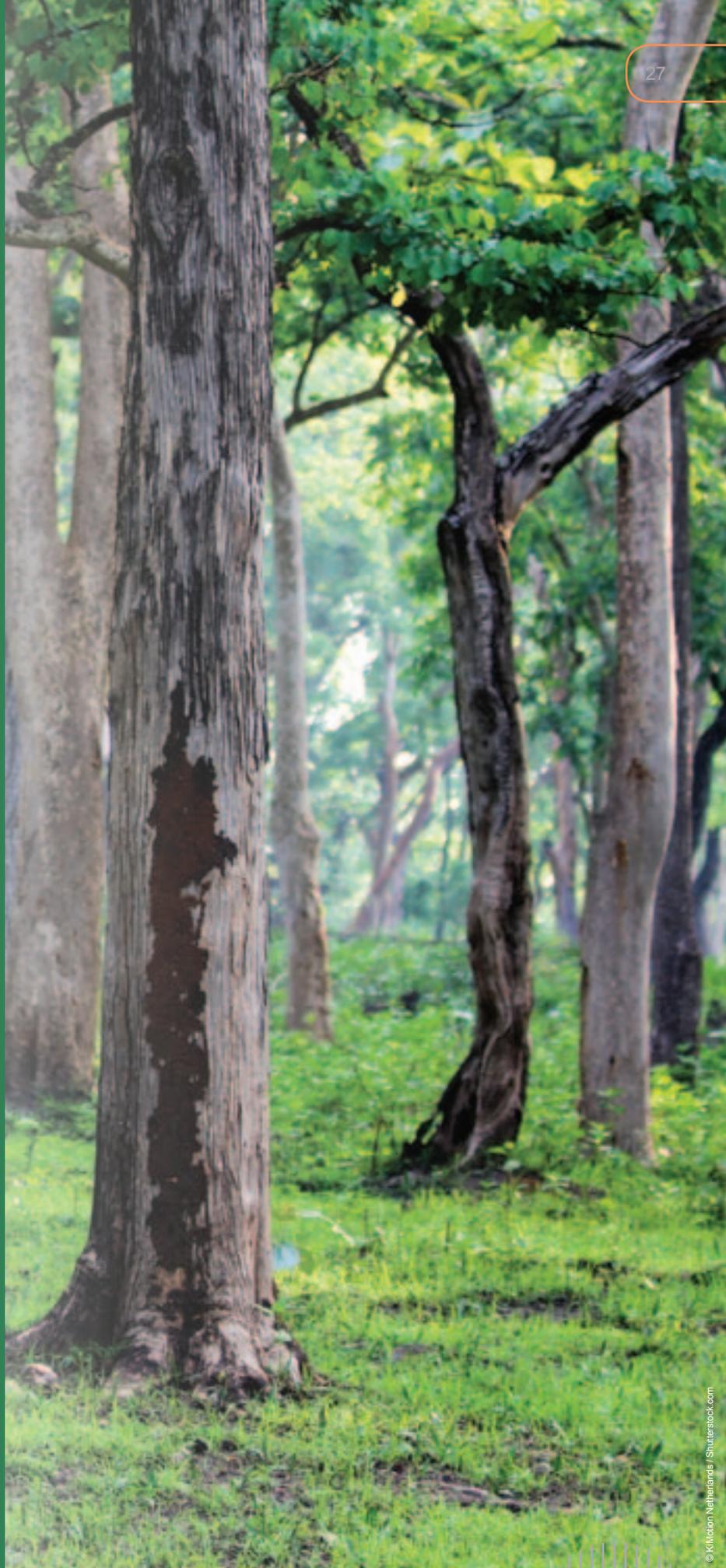
JFMC – Jambupani, Forest division, Burhanpur

The JFMC – Jambupani, Forest division, Burhanpur has been allocated an area of 4,212 hectares (ha) for forest protection and forest development. Within this allotted area, the committee has taken proactive measures to free 400 ha of forest from encroachment.

As the area was infested with lantana – an invasive weed – this first had to be uprooted by JFMC members and forest staff. Contour trenches were dug and 55,000 saplings planted to improve forest cover using local species like teak, mahua and palash, along with some fruit-bearing species. JFMC members also planted khair, neem, babool and dinananth ghaas in neighbouring forest areas to help with the natural regeneration of these species.

Importantly, JFMC members have actively involved local villagers in controlling encroachment into the forest. In recognition of its exemplary contribution to forest protection and conservation, JFMC – Jambupani was given the Shaheed Amrita Devi Bishnoi award in 2009.

Source: JFM–FDA, Madhya Pradesh Forest Department



- ▶ Study and promote alternate energy sources in forest villages without access to electricity. Forest dwellers depend heavily on forest biomass to provide light and heat and to use in cooking their food. Interventions, such as the Lighting a Billion Lives Programme, which provides solar lanterns and charging stations to rural areas in many countries, should be supported and implemented in Madhya Pradesh.
- ▶ Introduce skill-building programmes to help communities strengthen the management and marketing of non-timber forest products. Ensuring the livelihoods security of forest-dependent communities in the face of climate change is a major challenge. The potential of ecotourism for enhancing local employment and income should be explored.
- ▶ Protect the biodiversity that is threatened by climate change in Madhya Pradesh. This will require integrating climate change concerns into the State's Biodiversity Action Plan. It also calls for the identification of ecologically fragile areas, rare, endangered and threatened species and alien invasive species to inform work plans for biodiversity conservation.
- ▶ Enhance green cover outside of the forests by supporting social forestry and agroforestry activities and by planting trees along roads, canals and railways. Such initiatives need to be intensified with the involvement of multiple state departments.
- ▶ Conduct a Vulnerability Assessment in Madhya Pradesh using indicators that relate to ecological, socio-economic, poverty and other conditions affecting the vulnerability of rural communities to climate change. Understanding the regional and local dimensions of vulnerability is essential to develop appropriate and targeted adaptation measures. Such efforts must also recognise that the impacts of climate change will not be felt in isolation, but as a combination of multiple stresses.
- ▶ Strengthen the Joint Forestry Management Committees so that they can be more actively involved in sustainable forest development activities, including forest management and monitoring. Madhya Pradesh has been active in promoting people's participation in sustainable forest management through the establishment of over 15,000 of these committees. Members are drawn from rural communities and contribute to conservation by protecting the forests from fire, grazing and illegal harvesting in exchange for a share of the revenues from the sale of timber and non-timber products. Community participation and ownership of such activities should be appropriately rewarded.

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The Madhya Pradesh State Action Plan on Climate Change (SAPCC) has been prepared by the Climate Change Cell, Environmental Planning and Coordination Organisation (EPCO), Housing & Environment Department, Government of Madhya Pradesh. The Plan outlines the strategies required to strengthen development planning and build a more climate-resilient State. It aims to promote the integration of appropriate adaptation/mitigation strategies into the State's development policies and programmes. It is based on secondary data and promotes 'no regret' measures.

In order to share the results of the Madhya Pradesh SAPCC and begin to address climate change concerns through development policies and programmes, the Climate Change Cell of EPCO commissioned a series of policy briefs. CDKN was tasked with producing these, based on the Madhya Pradesh SAPCC, as a Communications Project. This brief is one of a series of ten sector policy briefs, designed to inform stakeholders about the strategies and commitments established in the SAPCC that are of relevance to their sector. Further information can be found in the full SAPCC, available at http://www.epco.in/pdf/Draft_MP_SAPCC.pdf

