

Madhya Pradesh State Action Plan on Climate Change

Sector Policy Brief: URBAN ADMINISTRATION AND TRANSPORT

Madhya Pradesh has a large and growing urban population, expected to reach 31.2 million or 34% of the State's population by 2026. This will mean many environmental, economic and social challenges for urban planners.

The State is served by a network of highways and roads measuring about 74,000 kilometres. Public transport is not well developed with the result that urban dwellers depend heavily on private cars and autos. The State Government has put into place a range of policies and programmes to support urban development and transport management. These include a housing policy aimed at reducing urban sprawl and the growth of slums, and efforts to improve the road network and to make public transport more effective and user-friendly.

Urban administration and transport in Madhya Pradesh: Challenges in energy and water supply, and pollution

Cities are major energy consumers. Excessive or faulty cooling systems, poor lighting technology and electric power transmission and distribution losses all waste energy. In 2009–2010, the transmission and distribution losses in Madhya Pradesh stood at 32.13% due to technical inefficiencies and theft. As cities have grown, the management of solid and liquid waste has become a major challenge. Untreated waste is a major potential source of methane: a greenhouse gas that is over 20 times more potent than CO₂.

The inefficiency of the public transport system and inadequate roads breed traffic jams and long commutes, leading to ever-higher fossil fuel CO₂ emissions. Urban development tends to reduce the amount of green cover available and makes use of materials – such as asphalt and concrete – that retain heat. This can lead to the increased production of pollutants, such as ozone, and a decrease in water quality as warmer waters flow into local rivers and streams, disrupting their ecosystems. In the land-locked State of Madhya Pradesh, variations in precipitation patterns are placing further stress on the rain-fed rivers that serve the cities. Industrial effluents have also deteriorated the quality of surface water bodies and excessive exploration has led to the depletion of groundwater. Health impacts associated with declining water quality have already been recorded in the State.

What does climate change mean for urban development and transport?

Urban areas are vulnerable to the impacts of climate change from various angles. There is a risk of 'heat islands' developing in city centres due to the loss of green cover. This heat stress causes health problems as well as damage to infrastructure. Rising temperatures also increase the need for air conditioners and coolers which are energy intensive and further contribute to climate change.

Climate change and its impact on increased temperatures and the frequency of flooding and drought may also help the spread of insect-borne diseases like malaria and dengue. Densely populated cities provide ideal breeding grounds for these vectors due to poor sanitation in urban slums and accumulated sewage. Further water stress may result from variations in rainfall patterns, together with industrial pollution of surface water, and further threaten the quality and supply of water to vulnerable communities.

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 urban administration and transport sectors. The key strategies are to:

- ▶ Ensure efficient energy use, which will go a long way towards reducing the emissions of greenhouse gases in cities. So-called

Increasing population, uncontrolled development and rapid urbanisation have led to a waste crisis in the city of Bhopal. The population of more than 2 million produces approximately 420–460 tons of rubbish every day. The usual practice is for residents to dump their refuse where they like. That which is collected is dumped at a site in Bhanpur Kanti.

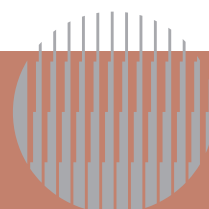
Sarthak, a local NGO, is collaborating with the Bhopal Municipal Corporation and Madhya Pradesh Pollution Control Board to develop a sustainable system for integrated waste management in five wards, and train rag-pickers to earn a living through the recycling and reuse of discarded items. Since 2010, the project has resulted in nearly 1,000 megatons (MTs) of plastic bags being reprocessed and used as fuel in cement plants, saving nearly 2,500 MTs of CO₂ emissions from the burning of plastic. Nearly 1,500 rag-pickers have joined the scheme and through it gained a new livelihood and status in society.

Source: MoEF et.al (2011) Bhopal City – Telling Their Own Stories. The GEF Small Grants Programme

demand-side management, which involves actions by the energy utility companies to influence the quantity or patterns of consumption, could be used to reduce the amount of energy consumed by both the commercial and residential sectors. Current practices in 'green building,' which involve environmentally sustainable and resource-efficient structures and processes, should be explored and promoted. Such practices include water management and conservation

and the use of energy efficient household appliances. Efforts should be taken to more vigorously enforce existing building by-laws, energy conservation building codes and the National Building Code of India.

- Provide high quality drinking water – a persistent challenge in urban areas. Urgent steps must be taken to improve and strengthen the water supply systems in the cities of Madhya Pradesh. The State Water Resources Department reports that groundwater levels are severely depleted, particularly in western Madhya Pradesh, due to exploration and commercial sales; these should be closely regulated and monitored, especially in areas where piped water facilities are available. The use of energy efficient water pumps should be encouraged throughout the State.
- Formulate stormwater management plans using climate-modeling techniques to help predict and plan the management of urban floods. Heavier rainfall, fiercer storms and flooding are likely to increase as climate change takes hold, according to the International Panel on Climate Change. This could ruin the economies and the lives of millions of vulnerable people living in or near urban areas.
- Raise awareness among the population of best practices for disposing waste, including the separation of waste into dry and wet components. While waste management is principally the responsibility of municipal governments, as the cities have grown the management of solid waste has become a major challenge. Too often, practices for handling, collecting, storing and disposing of urban waste are inadequate, posing risks



to the environment and to public health. In addition, more research is needed on resource recovery recycling and harnessing the energy content of waste to produce fuel and electricity.

- ▶ Explore and promote appropriate low cost technologies for recycling grey water – the water generated by domestic activities, such as laundry, dishwashing and bathing – at the household level. As the demand for water in urban areas increases, so does the need for new approaches to reducing, reusing and recycling water. While recycled grey water is not safe to drink, it can be used for landscape irrigation, washing and flushing toilets.
- ▶ Adopt sustainable technologies, such as emission norms, clean fuel and traffic management. Sustainable urban transport planning is also needed urgently to tackle the complex problems affecting mobility and accessibility in urban areas. Planning should emphasise the quality and connectivity of road networks in Madhya Pradesh as well as the efficiency and wide availability of mass transportation.
- ▶ Encourage walking and cycling, low energy consumption and reduced pollution through

urban planning, which should take the 'compact city' approach and emphasise an efficient public transport system. Sustainable urban planning has been a priority for Madhya Pradesh since the adoption of the State Housing and Habitat Policy in 2007. This requires incorporating climate change concerns in plans and actions to develop houses and habitats in urban areas. Planning should also focus on protecting carbon sinks in and around urban centres, stormwater management and the embankment of low lying areas, and better disaster warning systems.

- ▶ Provide subsidies for green technologies and incentives for adopting them. Policies are also needed to ensure the strict implementation of low carbon technologies.
- ▶ Create and adopt suitable benchmarks for urban administration in order to enhance the effectiveness of service delivery mechanisms.
- ▶ Conduct a systematic study to explore opportunities and pilot projects around the Clean Development Mechanism (Kyoto Protocol) with further projects to improve waste management and demand-side energy management in urban areas.

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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



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