Switching to green power justly

As can be seen from the case of Maharashtra, planning is essential for a just transition

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My colleagues and I explored this inquiry last year, selecting Maharashtra as a case study. (Reuters Photo)

One only has to read the newspaper headlines to realise that climate change is no longer a distant threat. For instance, a headline from January this year announced, "Mumbai experiences its hottest January day with temperatures soaring above 35 degrees Celsius." Another alarming headline highlighted, "Delayed snowfall, forest fires, migration, and dwindling tourism signal a distress call from India's mountains." These examples vividly illustrate the local repercussions of global warming. They underscore that the real journey toward a sustainable future will unfold at the district and state levels. But what strategy can states and districts adopt to become the focal point of climate action? My colleagues and I explored this inquiry last year, selecting Maharashtra as a case study.

Maharashtra, both highly vulnerable to the changing climate and a major greenhouse (GHG) gas emitter, presents a microcosm of challenges posed by the climate crisis at the sub-national level. On the one hand, the climatic impacts will affect the state's growth and development; on the other, transitioning away from fossil fuel, essential to reduce emissions, threatens to close thousands of factories and leave behind millions of workers. The critical question explored was how Maharashtra can adapt to these climatic shifts and transition towards sustainable energy sources without compromising its economic vitality and social welfare. The research suggests that the solution lies in a "just transition"—a strategic approach that weaves together climate action, green growth, and social justice.

In most studies on climate vulnerability, Maharashtra emerges as one of the most vulnerable states in the country. This is because climate change-driven extreme weather events are impacting every part of the state. While Marathwada and Vidarbha confront drought, the Konkan region experiences flood. The state has also been experiencing increasing heatwaves in the past two decades. A deadly example of this was the heatwave in Kharghar last year in which 14 died, and many were hospitalised. Mumbai, the country's financial capital, is now hammered by floods and heat. All this is translating into a massive loss to the economy.

Take the agriculture sector, which is badly affected by drought, floods, hailstorms, and cyclones. About three-fourths of Maharashtra's cropped areas are vulnerable to these extreme events, which is now causing real losses. In 2021-22, for example, the state government sanctioned about Rs 4,300 crore to farmers as compensation for crop losses. This increased to Rs 7200 crore in 2022-23—a two-third increase.

However, these costs are just a fraction of the total losses, as the state is also paying for infrastructure damage and repairs. The losses to businesses and individuals are likely manifold due to work disruptions and loss of property.

Maharashtra is also one of the major emitters of GHGs, accounting for 10% of the country's emissions. The emissions have grown at 4.1% per year since 2011-12, a rate higher than the national average. Besides, its per capita emissions are 2.5 tonnes, 15% higher than the national average.

These emissions arise as the state's economic engines run on fossil fuels. It has the largest fleet of coal-based power plants and is the second-largest consumer of petroleum products. It is the largest manufacturer of automobiles and the fifth-largest coal producer. Besides, it has the third-largest number of factories in the country, about 40% of which are heavily dependent on coal, oil, and gas. The transition to green energy will affect all these sectors, but most importantly, it will impact over a million formal workers and many low-paid informal workers.

The top three sectors facing challenges within the next 10 years are coal mining, coal-based power, and automobiles. Over 60% of the currently operational coal mines in Maharashtra will likely close in the next 10 years due to economic unviability and resource exhaustion. Similarly, one-fourth of the thermal power fleet too is likely to be decommissioned due to economic and environmental factors. On the other hand, the automobile sector, which accounts for 7% of the gross state domestic product (GSDP), will be impacted by the electric vehicle transition, especially 2 and 3-wheelers. These sectors require transition plans soon to minimise disruptions to jobs and livelihoods.

Geographically, the green energy transition will affect 14 districts with a large concentration of fossil fuel-dependent industries. Many of these districts are also highly vulnerable to climatic impacts. For example, Nagpur, Chandrapur, and Yavatmal have large concentrations of coal mines, coal-based power plants, and factories. These districts are also draught-prone and highly vulnerable to extreme events. The other hotspot is the Pune district, with a large concentration of the auto industry.

To deal with the climate emergency and the transition to green energy, the state needs a multi-pronged approach to enable a just transition. First, it needs a comprehensive just transition policy focusing on economic diversification, green energy, and industry development in the hotspot districts; land and infrastructure repurposing; workforce development; and social infrastructure investments. Second, it must develop tailored regional plans for hotspot districts to prioritise interventions and attract investments. The priority regions for such a plan are the Chandrapur-Nagpur-Yavatmal and Pune clusters.

Third, repurposing land and factories will be essential to avoid economic disruptions. In Maharashtra, over 20,000 ha of land is available with closed and unprofitable mines, which can be repurposed for the development of green energy and green industries. This will also avoid the pains of land acquisition and displacement. Fourth, preparing the workforce for the green economy through skilling and reskilling will be essential to create millions of green jobs and push for the next stage of growth. Lastly, significant investments would be required from public and private sources to develop green energy, industry and infrastructure. Some existing funds, like the District Mineral Foundation (DMF) funds with coal districts, can be used to kick-start transition measures.

By prioritising a just transition, Maharashtra can navigate the disruptions due to economic and climatic change, create new green jobs, and achieve its ambitious goal of a trillion-dollar GSDP by 2030.

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