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## **Resilience and recovery: Strengthening environmental sustainability in India's post-pandemic economy**

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### **Abstract**

The novel coronavirus, COVID-19, spread rapidly and widely across the world in the year 2020 and what began as a massive challenge for health services in many of the impacted nations now also threatens to send the world's economy into an unprecedented recession. Latest World Bank reductions in its growth forecasts for India for 2020-21 confirm that lower growth projections now stand at 2.8%, compared to the rise of 5% forecast for 2019-20. Informal sector workers, and the members of lower income groups are worst hit, since their wages have simply vanished. The linkages between health, environment, and the economy have been reinforced. There are many evidences that linked a higher number of mortalities attributed to COVID-19 and the incidence of air pollution. Increasing deforestation has exposed the world to diseases carried by wildlife. However, global warming may melt the ice carrying undiscovered viruses in the permafrost. But perhaps the crisis has also revealed that the governments and people have enough capacity to take really tough, swift action at the face of an overarching threat. As India rebuilds its economy, it is worth reflecting on all these systemic actions needed to shift toward a more sustainable and resilient economy. This paper explores this complex interplay between resilience, recovery, and environmental sustainability within a post-pandemic context, applied to the case of India. The subject matter sharply accentuates the necessity of having resilient economies that can face such similar shocks during its process while highlighting the pressing need for sustainable recovery strategies. This paper surveys the case of India with the unique challenges and policy responses in order to gauge possible trajectories toward enhancing environmental sustainability in step with economic recovery.

**Keywords:** COVID-19, Coronavirus pandemic, global recession, India economic growth, World Bank forecast

### **Introduction**

One of the frailties exposed by the global system is its inability to handle the spread of the COVID-19 pandemic as all economic activities, health systems, and lifestyles suffered severely and negatively. Governments and institutions have succeeded in combating the public health crisis, recalling stagnant economies, and finding a new normal to reboot growth, and this pandemic has exposed the fragility of ecosystems with respect to sustainable recovery. The concept of resilience-capacity to absorb shocks and recover from it-became the central theme of discussion during post-pandemic recovery. As countries look at India in regards to rebuilding their economies, it has become even more evident that revival strategies need to integrate environmental sustainability for growth and resilience in the future.

The events brought home strongly that economic prosperity is closely linked with the health of the environment. Nothing could ever reveal the interdependence of human activities and natural resources so well as the disruptions climate change and degradation have brought into ecosystems today, challenging urgent action. India-an emerging country with a diverse economy-is presented with a dual challenge: to strive for recovery and seek to ease these challenges more effectively against environmental pressures. To Strengthen Resilience, Promote Sustainable Development, and Manage Future Risks: This Paper Employs the Lessons of the Pandemic to Forge an Environmental Economics Policy for India.

### **Post Pandemic crisis**

The challenges stemming from this pandemic are greater in India than in many other countries. An economic slowdown that predates the pandemic is overlaid with the pandemic's fallout. Essentially, India faces a compounded crisis. The pandemic has only deepened existing fault lines in the Indian economy. Moreover, India will now have to contend with the unpredictable vagaries of changes in trade, investments, private consumption, and government expenditure. The fiscal policy will have to address the extent

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and the limits of the reach of the state in raising and deploying resources. Monetary policy will have to be much more adaptive, and must find new ways to be effective in these precarious times. India will require nimble trade policies sensitive to fast-changing trends in global commerce. In short, this is the case of a very different challenge for Indian economy recovery compared to that of developed economies. Here, the developed countries are mainly just concerned with tiding over this period. Emergency fiscal efforts and stimulus packages in those countries will aim at providing a measure of stability to their otherwise pandemic-hit economies. The first goal on the agenda is restoring pre-pandemic circumstances. India has, however, to drive the travails of compounded economic crisis and get back on the growth path. There is no alternative but to tide over. Indeed, it needs much more than just recovery: India also needs to build long-term resilience in order to eventually get used to a not-so-certain future. A high degree of policy elasticity is no easy task. But recovery will amount to little unless the same time solutions are sought concurrently for the many long-standing structural constraints that plague the Indian economy. Deep economic transformation is also required for India to avail itself of the maximum benefits of the advantages lying beyond its borders whether it be by ensuring that supply chains be diverted into India or by ensuring that India remains at the center of strategic development of South Asia. None of these objectives can be pursued to their fullest extent unless the compounded economic crisis is brought under control. In such a post-pandemic world, the imperative for external stability has to be taken up as part of an effort at building resilience at home. Long-term economic growth and stability by themselves will therefore naturally give India greater leverage in exploring new geostrategic opportunities, including, for instance, in frontier areas like global technology standards.

### **Economic Impact of the Pandemic**

Like the rest of the world, the Indian economy suffered due to the COVID-19 pandemic. Lockdowns, and subsequent containment measures to dampen the tide of the virus pandemic have led to a sharp contraction in economic activities, like manufacturing, services, as well as sectors of agriculture. Millions of jobs and livelihoods were lost, and an important majority was pushed to the brink of poverty. The informal sector suffers because more than half the workforce of India falls under this category; workers in the informal sector are not covered by social safety nets. Indian Government has undertaken a wide range of fiscal and monetary interventions in order to stabilize the economy following the economic crisis. The measures were under the brand name of Atmanirbhar Bharat, Self-Reliant India. These included among other domestic production boost, Smes, and digital technologies. Some of the economic fallout was cushioned by the measures; however, the recovery has been slow and uneven with some sectors recovering fast while others are still at their worst.

### **Environmental Consequences of the Pandemic**

The pandemic did cause an economic dislocation, but along with that occurred some temporary environmental gains. Industrial activities slowed down, transportation was lower, and energy consumption declined, which further resulted in an essential decline in the levels of air pollution across the

major Indian cities. Wildlife flourished in some regions because of the decreased interference from humans, while water bodies reflected improvement, but these benefits were short-lived, as economic activities resumed and the levels of pollution quickly bounced back to their pre-pandemic lifestyles. This pandemic has exposed the need for a more sustainable economy rather than a quick fix to get things back to what they have been. Indian rapid industrialization and urbanization have created excessive utilization of natural resources, which creates air and water pollution, deforestation, and biodiversity loss. Economic slowdown marked a sneak preview of what was possible through reduced human impact on the environment but how hard it could be to balance it out between economic growth and the importance of conserving it.

### **Building Resilient Systems for a Just and Sustainable Future Post-Pandemic**

An important lesson the pandemic has extensively touched our lives with is compassion and coexistence. To be sure, we need to build on this notion of empathy toward achieving just economic, social, and governance systems. This is where we do not limit these ideas to merely something that falls within the domain of civil society during trying times, but instead, systematically build up to efficient and scalable businesses, service delivery systems, institutions, and governance models just and resilient. Take the example of Aadhaar, Jan Dhan, or those newly launched smartphone applications. All these, ostensibly the huge successes of the government, are merely partial fulfillments of their intended role in the time of the pandemic. All we need is some political will and technological support in order to shore up governance, make people less helpless, and more potent to cope. This clearly showed that the human suffering in this pandemic was not because of a lack of money or scarcity of food grains but mainly due to weak governance pertaining to weak systems and institutions. There is a deep-lying requirement that this human-to-human compassion be translated into human-to-nature compassion. In the way forward, there are lessons to be learnt from this in the difference and variations of cultural and religious beliefs and good practices that may be applied in this context. How this can actually be internalized and integrated within the development policies will necessitate awareness of concepts of coexistence and compassion, which we have learned during this pandemic. This would include examples like the work-from-home model that works for most sectors without compromising on work productivity; models for delivery of a range of health- and education-related services; and the Aarogya Setu smartphone application for nationwide quick communication about and surveillance of the status of the disease. As rightly appreciated, these make perfect economic sense, as well as have huge positive implications for climate change, ecosystems, and the SDGs.

### **Resilience in Economic Recovery**

Resilience for the Indian economy in the context of post-pandemic recovery means an economic system able to absorb shocks and bounce back from crises while keeping growth stability and sustainability. Focus areas for the Indian economy in building resilience: Vulnerabilities exposed by the pandemic. Main vulnerabilities exposed during the pandemic are supply chain fragility, an over-reliance on certain sectors, and safety nets for informal

workers. Diversification is the most critical factor of resilience. The Indian economy, largely dependent on sectors such as agriculture and manufacturing, should diversify in order to increase its resilience against any future shock. A new conclusion would be adding steps taken in the emerging sectors of renewable energy, information technology, and digital infrastructures. The pandemic has rapidly gone through the speeding up of digital technologies, and India could take advantage of this boom in a way to create new economic opportunities, thereby building a much more resilient economy. Social equity is another very important aspect of resilience; pandemic responses and recovery presented with disproportionate impacts to vulnerable groups that include women, low-income, and even rural populations, urging the need for an inclusive recovery that would redress the needs of such groups. For this, increasing healthcare delivery, education, and social protection seem to be essential elements that should accompany notions of gender equality and rural development.

### Strengthening Environmental Sustainability

However, the new economic push in India must be at one end with the solution of long-standing environmental problems the country is plagued with. Climate change, pollution, and loss of natural resources are equally pertinent economic threats since these drastically imperil long-term stability. The building on or improvement of environmental sustainability in the programs of post-pandemic recovery will be a crucial way of being sure that India can prosper in resilient and inclusive ways. Transition into Renewal Energy India has taken giant strides in pursuing renewable energy, including solar and wind. The policy set by the government is aggressive in terms of increasing renewable energy capacity to 450 GW by 2030. Not only does it reduce greenhouse gas emissions, but it also brings about new economic opportunities and jobs through transition into clean energy. Renewable energy drives sustainable growth while reducing dependence on fossil fuel. Sustainable Agriculture: Agriculture is one of the significant sectors in India, employing around half of India's work force. However, conventional farming has been known to cause environmental degradation, such as soil erosion and water depletion, besides using harmful chemicals. Hence, encouraging sustainable agriculture practice such as organic farming, agroforestry, and water conservation techniques, can promote better food security, enhance livelihoods at rural area, and reduce degrading effects of agriculture on the environment. The concept of the circular economy marks the reduction, reuse, and recycling of resources to build the environmental-friendly approach toward sustainability. The country generates such a high amount of waste, which is usually landfilled or pollutes water bodies. Applying the thinking of a circular economy reduces waste through more efficient use of resources and new economic opportunities in sectors like recycling, waste management, and sustainable manufacturing. Urban Planning and Infrastructure: Massive-scale urbanization has expanded the cities of India, creating greater demands for infrastructure. But most of the urban growth was unplanned and, as a result, crowded, polluted, and badly inadequately provided with basic amenities. Encouraging sustainable planning of urban areas and investment in green infrastructure like public transport, energy-efficient buildings, and smart cities can greatly

minimize the negative impacts on the environment that result from urban habitation, as well as improve the living conditions that citizens live in.

### Challenges to Sustainable Recovery

- There are many potential reasons for strengthening environmental sustainability in India's post-pandemic recovery, yet considerable challenges are also involved, such as:
  - Economic Trade-offs:** An economy grows its way out of poverty, and this process is not conducive to making environmental sustainability easy because environmental sustainability might call for postponing development benefits in favor of particular elements of growth. Balancing economic growth with environmental sustainability can be a difficult task, especially for a developing country like India, where there is pressure to focus on job creation and industrial development. Policymakers must carefully deliberate over short-term economic gains and long-term environmental benefits.
  - **Financing and Investment:** Sustained recovery would also require investments in green technologies, infrastructure, and sustainable practices. Gathering much-needed financing is a huge challenge, especially given the pandemic-induced economic downturn. International funding, public-private partnerships, and innovative financing mechanisms will determine whether well-intentioned plans translate into sustainable action.
  - **Policy coordination:** This strand of environmental sustainability cuts across several government departments, sectors, and governance. Implementing policies across the different jurisdictions will involve coordination between the national and state governments as well as consultation with the private sector stakeholders, civil society, and local communities.

### Recommendations for Sustainable and Resilient Recovery

Investment in infrastructure is the best response to keeping money rolling and people working. What infrastructure should be built, though? Data from the 2008-09 financial crisis indicates that South Korea came back faster than any other OECD economies, directing close to 70% of its stimulus to green measures. In the U.S. 2009 recovery package of the Great Recession, it was found out that investments in clean energy and public transport created more jobs than the traditional investments. India should also grasp this opportunity to increase the commitment for renewables, particularly rooftop solar, through policy mechanisms and business models. Decentralized power can potentially distribute all critical services in remote areas if initial capital constrains can be confronted. It should reconsider any potential import duties on solar panels because this will not add any value to local production but may increase the cost of solar energy. Scaling up electrification and adoption of public transport will also prove to be very important for reducing traffic congestion and air pollution. There will be a need for close coordination with the electricity sector and a greater focus on vehicle charging infrastructure. Reinvestment in cold storage facilities and supply chains would ensure

preservation and timely delivery of agricultural produce and minimize losses to farmers. About 90 per cent of India's workforce is in informal employment, which includes the gig economy. This group is particularly susceptible to economic shocks and is more in need of higher access to formal credit and social safety nets to include insurance and pension schemes. Beyond employment guarantees, a universal basic income – more comprehensive than schemes currently in place, conditional on having an occupation and land, for instance – would help funnel essential resources for subsistence or investment in education and health. Higher access to bank accounts for the 20% of adults without one, according to 2017 data, would help to deliver this income relatively efficiently to households.

Fiscal measures will include recovery and resilience alongside low-carbon development. The Indian government has declared an economic stimulus of INR 1.7 trillion (around \$24 billion). It is also contemplating the second round of bailout of INR 750 billion for MSME. Although MSMEs need immediate financing to meet their wage bills, capital can also be invested in the upgrading efforts in needed industrial energy efficiency by the government. In fact, several sectors-the air transport and car-industries are two of the bigger ones-have to be propped up in order to recover. And in looking at fiscal circumstances, this is an opportunity to make the propping up contingent on greater sustainability through clean technologies and on improved fuel efficiency.

The crisis has altered the consumption patterns. The electricity usage patterns changed as people began working from home and arrived home at odd hours. Non-essential purchases have gone on freeze. All these factors provide an opportunity for demand-side solutions for long-term behavioral change toward more sustainable development. For instance, nudging and adjustments of tariffs can encourage energy conservation and thus reductions in consumption. Establishing reuse, recycling, and repair models for consumption can further enhance a circular economy and reduce the waste generated by existing business models. Extension of work-from-home policies will reduce road traffic congestion and air pollution.

one must remember that even in the future, employment may be higher in the gig economy and e-commerce sectors as well as in newer technologies that could help in supporting the response and resilience mechanisms of the future. Supporting such sectoral development would be appropriate regulation on data privacy and consumer protection. The decisions taken today can provide immediate relief while helping in the securing of lasting economic recovery, increasing community resilience, and creating long-term pathways to sustainable development. We shouldn't let this chance slip.

### Conclusion

This has been a wake-up call for all economies around the world in the wake of the COVID-19 pandemic, leaving no stone unturned-even for India. While it has hastened the prognosis of vulnerabilities in economic systems and called for resilience and sustainability in recovery efforts, India needs to achieve these daunting goals of promotion of economic growth while addressing pressing environmental concerns in the rebuilding process of its economy. More immediate ways of developing resilience in the rebuilding phase through diversification, social equity, and digital innovation will prove essential in ensuring a more stable, equitable, and inclusive process of recovery. Integrating

elements of environmental sustainability into economic policies is of paramount importance in long-term growth and sustainability. Investment in renewable energy, sustainable agriculture, circular economy practices, and green infrastructure can not only mitigate the unfavorable environmental impacts of development but also create new economic opportunities and improve the well-being of the Indian population. While there are plenty of challenges, the post-pandemic period is an opportunity for India to chart a more sustainable and resilient path in the future. Bold policy actions and strategic investments can set India up to be in a better state exiting the pandemic than entering it-stronger, more resilient, and better prepared for what the future entails.

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