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Environmental Pollution and Sustainability in India

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ABSTRACT: Nowadays, environmental issues are a significant problem that are growing rapidly and have not been properly addressed. Unsolved problems resulting from environmental pollution indicate people's inability to manage local problems over external issues. Globally, the natural and built environments are under threat, due to climatic disturbances: sudden, destructive heavy rains and repetitive floods due to intense tropical storms. Environmental issues have become more widespread and intense due to increasing industrial and human impacts on the environment. There is a need for an effort to achieve the objective of increasing ecoefficiency in several sectors of the economy envisaged in the national sustainable development strategy. The term sustainability is a key element of the ecological balance. Sustainable development requires a consistent supply of fuels such as hydrogen which, in the long term, is both sustainable and readily available at an affordable price that can be used for every needy work without harming the social impact. For a long time, it has been recognized that resource depletion and environmental pollution are the byproducts of industrial production.

KEYWORDS: environmental, pollution, sustainability, India, human, ecological, depletion

I. INTRODUCTION

India's economic growth over the past few years has raised the prospect of eliminating extensive poverty within a generation. But this growth has been clouded by a degrading physical environment and the growing scarcity of natural resources that are essential for sustaining further growth and eliminating poverty. It is no coincidence that the poorest areas of the country are also the most environmentally-stressed regions, with eroded soils, polluted waterways, and degraded forests. Simultaneously, rapid growth has unleashed greater public awareness and an unprecedented demand for the sound management of natural resources including air, water, forests, and biodiversity. Environmental sustainability is rapidly emerging as the next major development and policy challenge for the country, and will be central to the 12th Five Year Plan which is currently under preparation.[1,2,3]

The Challenges

Pollution: Water, land and air contamination associated with growth are increasing exponentially. Rapid investment in the manufacturing sector, that includes 17 highly polluting industries that are on the Central Pollution Control Board's "Red List", has fuelled this growth. The share of the most polluting sectors in India's exports has increased dramatically during the last decade suggesting that India could be emerging as a net exporter of pollution-intensive commodities. These trends indicate the need for greater investment in environmental management.

Natural Resources, Ecosystems and Biodiversity: In rural areas, poverty has become intertwined with resource degradation - poor soils, depleted aquifers and degraded forests. To subsist, the poor are compelled to mine and overuse these limited resources, creating a downward spiral of impoverishment and environmental degradation. There is growing pressure to better protect India's pockets of mega-biodiversity which are increasingly recognized as being of immense significance for global biodiversity, yet are increasingly threatened. Greater investment in the protection of these natural assets would yield a double dividend of poverty alleviation and the improved sustainability of growth.

Coastal Zone Management: India's coastal zone is endowed with fragile ecosystems including mangroves, coral reefs, estuaries, lagoons, and unique marine and terrestrial wildlife, which contribute in a significant manner to the national economy. Economic activities such as rapid urban-industrialization, maritime transport, marine fishing, tourism, coastal and sea bed mining, offshore oil and natural gas production, aquaculture, and the recent setting up of special economic zones have led to a significant exploitation of these resources.In addition to the contribution of increased economic activity, coastal development and livelihoods are under stress due to a higher incidence of severe weather events, which have the potential to inflict irreversible damage to lives and property, for communities that are traditionally poor and vulnerable to economic shocks.

Environmental Governance: The pace of infrastructure investments, which could reach $500 billion in the 12th Five Year Plan, calls for integrated and coordinated decision-making systems. This is made especially challenging by

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fragmented policies and multiple institutional legal and economic planning frameworks, with often conflicting objectives and approaches.

Environmental Health: The health impacts from pollution are comparable to those caused by malnutrition and have a significant impact on the productivity, health and the quality of life. Environmental health challenges are largely caused by poverty-related risks associated with poor access to basic services, such as safe drinking water and sanitation, and poor indoor air quality. The contamination of surface waters and the spread of pathogens are promoted by the alteration of catchments and watersheds that have accompanied rapid urbanization and intensive farming. Despite significant improvements in rural water supply and sanitation over the past few decades, water-related diseases still account for a large number of avoidable child deaths every year.

Climate Change: India is highly vulnerable to climate change due to a combination of; (i) high levels of poverty, (ii) population density, (iii) high reliance on natural resources, and (iv) an environment already under stress (for instance water resources). By mid-century, the mean annual temperature in India is projected to increase 1.1° to 2.3 ° C under the moderate climate change scenario of the Intergovernmental Panel on Climate Change (A1B), with anticipated deterioration of agro-climatic conditions. In the higher portion of that range, the loss to Indian GDP would be greater than the world average, and could be close to 5 %. Simultaneously, there is likely to be greater variability in rainfall, leading to higher risk of increased frequency and severity of droughts, floods and cyclones.

Reflecting the size of its economy and population, India is ranked as the sixth largest emitter of greenhouse gas emissions in the world. However, by most measures, India would be classified as a low carbon economy. It has: (i) a low intensity of emissions per unit of GDP (on par with the world average); (ii) per capita emissions that are among the lowest in the world (at about 10 percent of the developed country average) and (iii) forest cover that has stabilized. However, India's emissions are set to grow substantially due to its sustained economic growth.

Government Priorities

India has made a substantial effort in attempting to address environmental challenges. It has enacted stringent environmental legislation and has created institutions to monitor and enforce legislation. The National Environmental Policy (NEP) recognizes the value of harnessing market forces and incentives as part of the regulatory toolkit, and India is one of only three countries worldwide which has established a Green Tribunal to exclusively handle environmental litigation. On environmental governance, the GOI is contemplating the establishment of the National Appraisal and Monitoring Authority (NEAMA) to carry out environmental appraisals.

During the current 11th Five Year Plan, the Government issued regulations to promote an integrated and inclusive approach to coastal zone planning and the sound management of hazardous wastes, issued a number of critical policies (e.g. revised river conservation strategy and the National Biodiversity Plan), and established a Wildlife Crime Control Bureau to supplement existing conservation measures for species at risk, such as tigers. In response to the threat of climate change, the Prime Minister's National Council on Climate Change issued India's first comprehensive National Action Plan in June 2008. In the run-up to Copenhagen, India also volunteered its own target to reduce carbon intensity by 20 to 25 percent by 2020 against a 2005 baseline and established an Expert Group on Low Carbon Growth to identify how best to meet this challenge.[4,5,6]

World Bank Support

Responding to these pressures, the World Bank has developed a multi-pronged approach to address environmental issues and mitigate its lending risks:

A Sound Program of Knowledge Products and Lending: This seeks to improve the knowledge base for environmental solutions, and to pilot a number of programs to address key environmental challenges.

Risk Management and Mainstreaming through Cross Support Activities: Through the World Bank's safeguard policies, a sound mechanism for decision making has been developed. A number of tools to enable the integration of environmental management in project design, and minimize the environmental footprint of the Bank's operations have also been developed.

Country Systems and Capacity Building Initiatives help build institutional capacity, and include the piloting of country (state) systems for managing risks of World Bank projects.

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List of Active Projects
The World Bank has a growing relationship and portfolio in the environment sector. Projects under implementation include the following.

Integrated Coastal Zone Management Project ($222mn approved June 2010) to help build the appropriate institutional arrangements, capacity and advanced knowledge systems needed to implement the national program on integrated coastal zone management. It will also help pilot this approach in three coastal states, Gujarat, Orissa and West Bengal, through a range of complementary pilots in select coastal stretches to build state-level capacity.

Capacity Building for Industrial Pollution Management Project ($65mn approved June 2010) to build tangible human and technical capacity in state agencies in Andhra Pradesh and West Bengal for undertaking environmentally sound remediation of polluted sites and to support the development of a policy, institutional and methodological framework for the establishment of a National Program for Rehabilitation of Polluted Sites (NPRPS).

The National Ganga River Basin Authority Project ($1bn approved in May 2011): to build capacity of its nascent operational-level institutions, so that they can manage the long-term Ganga clean-up and conservation program; and implement a diverse set of demonstrative investments for reducing point-source pollution loads in a sustainable manner, at priority locations on the Ganga.

Biodiversity Conservation and Rural Livelihoods Project (GEF/IDA $23m approved in May 2011): to develop and promote new models of conservation at the landscape scale through enhanced capacity and institutional building for mainstreaming biodiversity conservation outcomes.

Pipeline Projects
Environmentally Sustainable Development Policy Loan in the State of Himachal Pradesh: The proposed Development Policy Loan will seek to establish a framework for environmental sustainability, which will promote the participation of the state public and private sectors in the National Mission on Enhanced Energy Efficiency, develop a policy and institutional framework for the further development of environmentally sound hydropower development, and enable sustainable development in a number of key sectors of the economy including: tourism, industry, and agricultural development and horticulture.

Global Environmental Facility (GEF): Following the recent replenishment, the World Bank has been requested to prepare a number of projects to be financed by the GEF, namely: Climate Resilience through Community-Based Approaches in Semi-Arid Areas, Integrated Biodiversity Hotspots and Improvements, Adaptive Management Tools in Sustainable Land Management, and Integrated Ecological Management of the Lakshadweep Sea.

Research
Energy Intensive Sectors of the India Economy: Options for Low Carbon Development: The study looks at five sectors of the Indian economy that accounted for three quarters of India's CO_2 emissions from energy use in 2007 – power generation, energy-intensive industries (like iron and steel, cement, fertilizer, refining, pulp and paper etc), road transportation, commercial buildings and residential housing.

It presents three carbon emission scenarios, outlining the different growth paths that India could follow from 2007 to 2031 -- the end of the Fifteenth Five Year Plan.

Sundarbans Sustainable Socio-Economic Development: The objective of the Non-Lending Technical Assistance is to assess measures that would build resilience of the socio-economic and biophysical system and achieve long term sustainable development. Resilient systems are those having a capacity to adapt when faced with persistent stresses, but the adaptive capacity of those residing in the Sundarbans has been undermined on an ongoing basis. Historic sea level rise from deltaic subsidence, salinity intrusion, flooding and nutrient loss in local soils have all conspired over the past century to render this one of the most hazardous areas in the Indian sub-continent.

India future: Vision for an Environmentally Sustainable Future: This study deals with a broader debate on the implications of rapid economic growth on environmental sustainability and the need to rethink India's current institutional arrangements in light of promoting long-term environmentally sustainability. The primary objectives of the study are to identify environmental challenges, opportunities and constraints to growth that will emerge in India over

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the next few decades and suggest policy responses and develop strategies to harmonize the twin objectives of growth and environmental sustainability in urban and ecologically fragile hill areas.[7,8,9]

II. DISCUSSION

Recently, the Centre for Science and Environment (CSE), released the State of India's Environment Report 2022.

- The report is the annual publication of the Centre for Science and Environment, and Down To Earth (magazine).
- The report focuses on climate change, migration, health and food systems. It also covers biodiversity, forest and wildlife, energy, industry, habitat, pollution, waste, agriculture and rural development.
- CSE is a public interest research and advocacy organisation based in New Delhi.
- Where does India Stand on Achieving its National Targets?
- Economy: The target for the economy is to raise the Gross Domestic Product (GDP) to nearly USD 4 trillion by 2022-23. But by 2020, the economy has grown only to USD 2.48 trillion.
    - The economy has largely shrunk during the Covid-19 pandemic, making it even more difficult to meet the deadline.
- Employment: The target is to increase the female labour force participation rate to at least 30% by 2022-23.
    - It stood at 17.3% in January-March 2020.
- Housing: The targets are to construct 29.5 million housing units under Pradhan Mantri Awas Yojana (PMAY)-Rural and 12 million units under PMAY-Urban.
    - Only about 46.8% and 38% respectively of the targets under 'Housing for All' have been achieved.
- Drinking Water: The target is to provide safe piped drinking water to all by 2022-23.
    - Only 45% of the target has been achieved.
- Agriculture: The target is to double farmers' income by 2022. While the average monthly income of an agricultural household has increased to Rs 10,218 from Rs 6,426, this increase is largely due to increase in wages and income from farming animals.
    - The share of income from crop production in the average monthly income of an agricultural household has, in fact, dropped — to 37.2% in 2018-19, from 48% in 2012-13.
- Digitisation of Land Records: Another target is to digitise all land records by 2022. While states like Madhya Pradesh, West Bengal and Odisha have made good progress, states like Jammu and Kashmir, Ladakh and Sikkim languish at 5%, 2% and 8.8% digitisation of land records, respectively.
    - Overall, the target is unlikely to be met, particularly because 14 states have witnessed deterioration in the quality of land records since 2019-20.
- Air Pollution: The target is to bring down Particulate Matter (PM) 2.5 levels in Indian cities to less than 50 micrograms per cubic metre (µg/m3). In 2020, when vehicular movement was restricted due to the pandemic, 23 of the 121 cities monitored for PM2.5 exceeded 50 $\mu g/m^3$.
- Solid Waste Management: The target is to achieve 100% source segregation in all households.
    - The overall progress is 78%, and while states like Kerala and Union territories like Puducherry have achieved the target, others like West Bengal and Delhi are woefully behind.
    - Manual scavenging is targeted for eradication, but India still has 66,692 manual scavengers.
- Forest Cover: The target is to increase it to 33.3% of the geographical area, as envisaged in the National Forest Policy, 1988.
    - By 2019, 21.6% of India was under forest cover.
- Energy: The target is to achieve 175 GW of renewable energy generation capacity by 2022.
    - Only 56% of this target has been achieved thus far.
- What was India's Performance on Sustainable Development Goals?
- India has slipped three spots to rank 120 on the 17 Sustainable Development Goals (SDG) adopted as a part of the 2030 agenda by 192 United Nations member states in 2015.
    - In 2021 India ranked 117 among 192 nations.
    - India's overall SDG score was 66 out of 100.
- India's rank dropped primarily because of major challenges in 11 SDGs including zero hunger, good health and wellbeing, gender equality and sustainable cities and communities.
- India also performed poorly in dealing with quality education and life on land aspects.
    - In 2021, India had suffered on the fronts of ending hunger and achieving food security, achieving gender equality and building resilient infrastructure, promoting inclusive and sustainable industrialisation and fostering innovation.
- How did the Indian States Perform?

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- Jharkhand and Bihar are the least prepared to meet the SDGs by the target year 2030.
- Kerala ranked first, followed by Tamil Nadu and Himachal Pradesh in the second position.
- The third position was shared by Goa, Karnataka, Andhra Pradesh and Uttarakhand.
- Among the Union Territories, Chandigarh was ranked first, followed by Delhi, Lakshadweep and Puducherry in the second place and the Andaman and Nicobar Islands on the third[10,11,12]

III. RESULTS

Protection of Environment

Concerns relating to pollution and the disposal of the large amount of ash from coal based power stations, which are the mainstay of India's power generation, are being addressed through strategies to promote environmentally sustainable power development.

- Special Purpose Vehicle (SPV) for Afforestation
- Fly Ash Utilisation Action Plan
- Initiatives for improving the environmental performance of coal based stations
- Clean Development Mechanism (CDM)
- ISO 14001

Special Purpose Vehicle (SPV) for Afforestation

A Special Purpose Vehicle is being set up jointly by NTPC and other Central Power Sector Undertakings as a Registered Society to take up afforestation and environmental measures in order to reduce the carbon dioxide in the atmosphere. The objectives of the Society shall be to:

- Undertake fruitful channelising of investments by members to increase the national forest cover.
- Identify suitable lands for afforestation for power projects of NTPC and other members through Ministry of Environment and Forests (MOEF) which will coordinate with the State Forest Departments/District Rural Development Authority etc.
- Facilitate quick procurement of forest clearance for the forestland proposed to be acquired by NTPC and other members for the future projects to be set up.
- Interact with MOEF to score off the necessary compensatory afforestation required for projects of NTPC and other members, which needs diversion of forestland.

It is noteworthy that NTPC has already planted over 1.45 crore trees, which is one of the biggest afforestation efforts in the country. In fact the ambient temperature around the Ramagundam Station of NTPC has come down by 30 Celsius due to the afforestation done by NTPC as revealed in a study by the National Remote Sensing Agency (NRSA), Hyderabad.

Fly Ash Utilisation Action Plan

Coal / Lignite based Thermal Power Generation has been the backbone of power capacity addition in the country. Indian coal is of low grade with ash content of the order of 30-60 % in comparison to imported coals which have a low ash content of the order of 2-20%. A large quantity of ash is, thus being generated at Coal / Lignite based Thermal Power Stations in the country, which not only requires a large area of precious land for its disposal but is also one of the sources of pollution of both air and water.

All Coal / Lignite based Thermal Power are required to follow the Ministry of Environment, Forests (MoEF) Notifications on fly ash utilization to achieve 100% utilization of fly ash. Ministry of Environment, Forest and Climate Change (MoEF&CC) has now issued a revised Notification on 31st December 2021 in supersession of earlier Notifications in order to widen the scope of ash utilization.

CEA compiles annual report on Fly Ash Generation at Coal / Lignite based Thermal Power Stations and its utilization in the country. As per the CEA report, ash utilization during Year 2021-22:

No. of Thermal Power Stations from which data have been received	200
Installed capacity (Mega watts)	213620.5
Coal Consumed (Million tons)	759.02

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Fly Ash Generation (Million tons)	270.82
Fly Ash Utilization (Million tons)	259.86
Percentage Utilization (%)	95.95
Percentage Average Ash Content (%)	35.68

In line with the MoEF&CC Notification dated 31.12.2021, Ministry of Power had issued an Advisory on 22.02.2022 for all Coal / Lignite based Thermal Power to dispose of the ash in a transparent manner.

Initiatives for improving the environmental performance of coal based stations

i. The monitoring of emissions by thermal power companies come under the purview of CPCB/SPCB. The emissions from thermal power plants is being monitored through online OCEMS portal of CPCB since 2017, for both central and state to keep a check on emission level from these power plants. However, Central Electricity Authority (CEA) compiles a CO2 database for all Grid connected Power stations in the country on annual basis and publish the same. The objective of this database is to establish authentic and consistent quantification of the CO2 emission baseline. The data of CO2 emission from Grid connected Power stations in Indian power sector of last five years is as under:

[Absolute Emissions in Million tons CO2]

2017-18	2018-19	2019-20	2020-21	2021-22
922.18	960.90	928.14	910.02	1,002.02

ii. The Thermal Power Stations are required to meet the environmental pollution standard set by MoEF&CC /CPCB/ SPCB from time to time. MOEF&CC has notified new environmental norms on 7th December 2015 for thermal power plants related to Particulate Matter (PM), SO2, NOx& Mercury emissions and also vide its notification dated 31.03.2021 had issued categorized thermal power plants in category A, B & C for compliance of new emission norms including provision of penalty for non-compliance. Further, MOEF&CC vide its notification dated 5th September 2022 has granted two year Extension to TPPs for compliance of SO2 emission norms

iii. Many TPPs have already adopted use of efficient technologies i.e. from subcritical to supercritical and now using ultra-supercritical technology in order to improve efficiency, thereby reducing coal consumption and thereby reducing emissions. A total capacity of Supercritical and Ultra-supercritical units of 63170 MW (91 supercritical Units) and 1320 MW (2 ultra-supercritical units) have been commissioned till 13.03.2023.

iv. The capacity of about 18,362.24 MW comprising 260 units of inefficient and old thermal power generation units has already been retired till 31.12.2022.

v. Ministry of Power on 08.10.2021 has issued revised policy on Bio-mass Utilization for Power Generation through Co-firing in Coal based Power Plants to use 5-10% blend of biomass pellets made, primarily of agro-residue along with coal after assessing the technical feasibility viz. safety aspect etc.

vi. Thermal Power Plants of total capacity of about 181 GW is covered under Perform, Achieve, Trade (PAT) scheme and they are given mandatory targets to reduce their specific energy consumption i.e. Net Heat Rate (kcal/kwh). BEE is the nodal agency for implementing the PAT scheme.[13,14,15]

vii. Carbon Capture, utilisation and Storage (CCUS): CCUS refers to suite of technologies, which will help to remove CO2 before it enters atmosphere. These technologies can play a diverse role in meeting global energy and climate goals. NTPC has taken up an R&D project to setup a 10 TPD Flue Gas CO2 to Methanol Plant at NTPC Vindhyachal to capture the CO2 from waste flue gases to convert it into Methanol.

Clean Development Mechanism (CDM)

To address increasing concerns related to the environment and to improve environmental performance, the services of Tata Energy Research Institute (TERI) have been engaged for providing consultancy services to the Ministry of Power on CDM. The terms of reference include project formulation, base line surveys for each project, negotiations with the CDM parties, identification of the counterpart CDM parties from the developed countries, cost of CO2 monitoring and verification of CO2 emission reduction and supervision of project implementation.

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ISO 14001

Established in November 1975 for nation's Sustainable Power Development, National Thermal Power Corporation Ltd. (NTPC) is today India's largest power utility with an installed capacity of 21,749 MW (19% of India's installed capacity) contributing to 26% of total generation in the country, with high availability factor of its power plants. NTPC has plans to double its capacity. NTPC has recently diversified into the hydro sector and formed for joint venture companies for distribution, R&M, etc. Environment Management is a high priority area in the company and several Policies have been formulated to ensure generation of green power. Through persuasion of sound environmental management systems and practices , NTPC's 18 stations have been accredited with ISO:14001 certification. As a responsible corporate citizen, NTPC is a member of Global Compact a UN initiative for Corporate social responsibility. The focus and emphasis in future in the company will be on generation of power in line with global standards and in complete harmony with the environment and nature.[16,17,18]

IV. CONCLUSION

Are environmental laws in India leading the way to protect our planet – or lacking what matters? It all depends on how you look at it. And Indian authorities are doing just that. Despite recent steps to step up sustainability, India's rapidly growing economy and lack of enforcement still add up to insufficiency. As such, Indian regulators are (quietly) revising its existing environmental acts and rules, which will likely result in more stringent requirements for companies. Even with no official details available yet on these revised regulations, you can still get a glimpse of where they're headed by looking at where they've already been. Read what to know about India's sustainability story to understand it's next logical step.

Environmental laws in India are tougher today, but still not enough

Environmental laws in India are adopted, implemented, and enforced by 3 main entities: the Ministry of Environment, Forest, and Climate Change along with the Central Pollution Control Board at the National level as well as the State Pollution Control Boards at the State level. The main environmental laws in India are, the:

- Environmental (Protection) Act 1986
- Water (Prevention and Control of Pollution) Act 1974
- Air (Prevention and Control of Pollution) Act 1981
- Rules made under the above acts

Like in other countries, these environmental laws set parameters for businesses to follow, such industry specific air emissions, discharge standards. But the problem is that they're not in line with current needs.

Water and air pollution is a major concern as dumping hazardous materials in water bodies, and hazardous emissions have been for the most part unmitigated in India. Laws regulating these activities haven't been updated since they were first formulated in the mid-1970s and 1980s. These laws regulate water/groundwater use consents/permits, compliance with effluent and emission discharge standards, and prohibit pollution of water resources. [19]

Water and ground water laws are complex in structure as they're regulated at different levels: National, State, and municipal. On top of that, the lack of a policy framework addressing current economic growth as well as and lackluster enforcement render these laws virtually ineffective.

India's sustainability story – so far

Although India's constitution clearly provides for environmental protection and improvement, the country only started to truly focus on these issues in the 1970s. And that was as a follow-up to the 1972 UN conference in Stockholm. Yet, since then, India has come a long way. The country has moved from reacting to environmental conventions as an obligation to setting an example in sustainability efforts.

EU-aligned waste management laws

In 2016 India revised several waste management rules. Among those, hazardous waste, e-waste, and Plastic Waste Management Rules were revised to align India's waste management with that of other regions, most notably the EU. Authorities incorporated Extended Producer Responsibility (EPR) into these laws, imposing significant responsibilities on manufacturers and companies that place products on the Indian market. To minimize the negative impact on the environment throughout products' lifecycles, these companies are now subject to the "polluters pays" principal. This approach requires facilities manufacturing or placing products on the market in India to set up mechanisms for collecting, "channelizing" (or passing through various passageways such as dealers), and taking them back at the end of life.

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Stricter penalties for damaging the environment

Companies that contravene any provisions of these environmental acts or rules are subject to severe consequences. More severe than we see in other countries for similar transgressions. Violations in India are punishable with imprisonment for up to 5 years (which is extended up to 7 years if the contravention continues for 1 year after the date of conviction) or fines of up to 1334 USD – or both. In the US, certain environmental contraventions result in 6-months to 1 year in jail. Additionally, the Indian Public Liability Insurance Act (1991) is in place to provide for damages to public victims or properties of accidents that occurred while handling hazardous substances.

Environmental laws that support sustainable development

India is one of the few countries in the world that mandates CSR reporting and expenditure. The Companies Corporate Social Responsibilities Policy Rules (2014) and Companies Act (2013) hold certain businesses (i.e., with a certain net worth, turnover, or net profit) to sustainability reporting standards. These companies must constitute a CSR Committee, spend at least 2% of its average net profits on CSR initiatives, and include an annual report on CSR in its annual board report.

Yet on top of these significant developments and milestones, there's still much progress to be done. As the second-most populated country on the planet, India is still one of the most polluting countries. Like its expansion of labor protection and revision of chemical management, the country plans to address this issue through a broader scope of environmental protection.

How will the existing environmental laws in India change?

India still sorely lacks in environmental compensation and other laws dealing with specific aspects of the environment. Effective regulatory institutions, appropriate compliance mechanisms, transparency in formulating laws, and stringent enforcement of such laws are the key needs of the hour. It's a high bar to reach, and we don't yet know exactly how the government plans to do so.

In 2014, the Subramanian Committee – set up by the Ministry of Environment, Forest and Climate Change (MoEFCC) – reviewed the country's environmental laws. But its report was rejected by Parliamentary Standing Committee on Science and Technology (PSCST). At that time, the PSCST found that the committee's essential recommendations would actually weaken existing environmental policies and laws. For instance, its recommendation to create a new "umbrella" law by subsuming the existing environmental laws. As a result, the government formed a new committee to oversee the review process, and we hope to soon see the fruit of its efforts

Since then, this new committee has been drafting a new law to replace the 3 main existing Acts: Air, Water, and Environment Protection. And it's doing so under strict confidentiality – away from the public eye. The goal is to consolidate and streamline the environmental laws to prevent overlaps and conflicts. Yet whatever new elements will be added are tightly under wraps.

The government remains rather quiet about the details of forthcoming environmental regulation

But… why so secret?

While Minister Narendra Modi sang India's praises for its climate change efforts at the 2021 UN Climate Change Conference (COP26), the government remains rather quiet about the details of forthcoming environmental regulation.

The process of formulating and adopting environment laws in India has never been transparent – nor participatory for the community. In fact, the government enacted some of recent laws as a way to cater to expanding industrial growth rather than the environment or public.

Case in point: Exemptions in the construction sector. In 2009, the Ministry of Environment proposed to exempt construction projects of up to 50,000 square meters from obtaining Environmental Impact Assessment (EIA). For citizens, this was clearly prioritizing the interest of emitters rather than the victims of pollutants. The majority of the country's known environmental scientists raised their voices – stating why this proposal will have a great impact on the environment. As a result, the proposal was dropped.

However, the review process for the most recent environmental law changes has been more hush-hush than those before it. Because there's still little information about this current round of revision, we can only speculate that the government is aware of the deficiencies in their approach. In other words, the government is motivated by the increasing uproar from the public that led them to revise existing laws in the first place. And hopefully, the committee wants to get it right before it's in the public eye.

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New environmental laws in India: More about opportunity than oppression.
Even without concrete information, we can confidently say that the new environmental laws in India won't likely dilute any existing provisions. (Especially after huge public backlash in the past.) Instead, companies should expect more stringent enforcement, streamlined laws, and new provisions to better protect and improve environmental health.

Regardless of how strict, these future requirements will bring with them opportunity. This approach will put businesses on the right path to adopting more sustainable and profitable models for long-time growth. Your company can get ahead with a detailed global outlook of trends. Assess your processes against evolving standards, such as for net-zero objectives and ESG to see what next steps you should take for sustainability. [20]

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