

# **AIR POLLUTION AS AN ENVIRONMENTAL COST FOR GREEN GDP OF INDIA**

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## **ABSTRACT**

A guide to national accounting called Integrated Environmental and Economic Accounting, released by the UN in 1993, concentrated on the monetary assessment of natural resources and allowed the cost of resource depletion and environmental damage to be deducted from GDP.(1) The guidebook specifically encouraged the creation of a "environmentally adjusted domestic product" (also known as a "green GDP") since it is a measure of a nation's readiness for sustainable economic development as well as the rise or fall in carbon dioxide emissions or waste per capita. China introduced this idea by publishing its first green GDP data for the year 2004 in 2006(2). Green GDP accounting's primary goals are to give a more accurate measure of welfare and to assess the sustainability of economy. Green GDP accounting is now a crucial foundation for creating and putting into practise global sustainable development policies. Natural resource depletion less pollution damage is equivalent to green GDP. (3) India ranks 169th out of 180 nations among the top six major economies, showing that its green growth is below average. The objective of this study is to examine the effects of air pollution on India's GDP development. The cost of air pollution and environmental damage is seen as an externality, and externalities are not included in GDP. To comprehend this effect, published reports on air pollution have been used. However, the economic cost of premature deaths and morbidity brought on by air pollution in 2016 was Rs. 2,60,000 crore, or 1.4% of GDP in India in 2019. Additionally, it stated that 1.7 million deaths in the nation—or 18% of all deaths—were caused by air pollution.(4)

**Key Words: Air Pollution, Degradation, Environment, Green, GDP**

## **1.1 INTRODUCTION**

GDP doesn't adequately explain National Capital because it doesn't deem relevant. Policymakers and economic planners do not place enough weight on the benefits that future protective environmental projects might provide in relation to their costs. The operational challenges associated with measuring and evaluating such assets prevent the beneficial advantages that might result from any forest or agricultural land from being taken into consideration. Additionally, the effects of the depletion of the natural resources are not taken into consideration in conventional GDP measures. (5) The need for sustainable development goes hand in hand with the requirement for a comprehensive macroeconomic indicator. GDP is frequently utilised in the analysis of political and economic policy because it is

mistakenly thought to be a measure of societal well-being. A good substitute in this case is the Green GDP. (5)

Early in the 1990s, in response to the inadequacies of the standard gross domestic product (GDP) to account for the economic consequences of depleted natural resources and incurred pollution, which in turn affect human welfare, the notion of "green GDP" was developed. The average definition of GDP is the total market value of all finished goods and services produced in a country during a specific time period (often a year), including exports minus imports (net exports). It is frequently wrongly viewed in the public discourse as a stand-in for progress and has been employed as a standard measure of the size of an economy in national accounting. (6) The State Environmental Protection Agency and the National Bureau of Statistics jointly produced the Chinese government's ecologically adjusted GDP, or "green GDP," which was made public in 2006. (SEPA and NBS 2006). The calculations took into account the costs of depleting different natural resources as well as assessments of pollution in the form of solid waste, water, and air. According to the report's findings, environmental impacts cost the nation's economy 3% of its GDP in 2004. (6) The accounting did not take into account issues like soil and groundwater contamination, as well as the entirety of the categories of natural resource depletion and ecological harm. Therefore, the 3 percent reduction was below what many analysts estimated the true expenses to be. It is now clear that green GDP is intellectually enticing but practically impossible for China and other countries. Complementary metrics and indices are required in order to quantify our genuine economic wealth and health, or the resilience of human-environmental systems. (6) Green GDP is computed by deducting net natural capital consumption, which accounts for resource depletion, environmental deterioration, and attempts to safeguard the environment, from the standard GDP.

In India, air pollution is a significant environmental problem. In 2019, India was home to 21 of the world's 30 most polluted cities. According to a research based on 2016 statistics, 13 of the world's 20 cities with the highest yearly levels of air pollution are in India, and at least 140 million people breathe air that is 10 times or more over the WHO acceptable limit. Industrial pollution accounts for 51% of the pollutants, followed by automobile pollution (27%), agricultural burning (17%), and miscellaneous causes (5%). 2 million Indians die prematurely each year as a result of air pollution. Vehicles and industry are the main sources of emissions, while burning biomass for heating and cooking is a major source of pollution in rural regions. (7) Rural regions use agricultural fields during the fall and spring as a significant source of smoke, haze, and particulate pollution since it is a less expensive alternative to mechanical tilling. In the GDP calculation, environmental degradation brought on by air pollution was taken as externality. The invention of Green GDP was prompted by the false impression of economic growth caused by the omission of this expense.

## 1.2 REVIEW OF LITERATURE

According to Stjepanovic, Tomic, and Skare (2017), using cross-country environmental adjusted GDP indicators might help clarify the importance of green growth and sustainable development. According to their research's findings, in the year 2014, almost all nations had significant differences in GDP growth rates and Green GDP growth rates, both within

and across groups of countries as well as between different categories of countries. They discovered that in industrialised nations, there is a 1% difference between average GDP growth and green GDP growth. This difference is even higher, when developing nations are considered, it stands around 3%. (8)

Despite the fact that environmental externalities, market imperfections, conceptual, technical, and ethical issues make it difficult to understand green growth and, in particular, to calculate the Green GDP indicator, standard growth modelling can be used to scale the sustainability of economic progress using alternative measures of economic activity. (9)

According to Chalanda Sonthi, Supanee Harnphattananusorn, and Sumalee Santipolvut's research from 2019, every production process results in both positive and negative outcomes. Neglecting the occurrence of poor outputs and focusing only on the expansion of good outputs might lead to the depletion of natural resources and a rise in pollution, which would have a long-term negative impact on the population's standard of living. In the case of Thailand, pollution emissions increased in tandem with economic growth, despite the emphasis placed on environmental issues in the various National Economic and Social Development Plans and the desire to achieve sustainable development as a framework for determining policy and the development of the nation. In addition, the results showed that the trend for a gap between GDP and green GDP broadly indicates that Thailand might be ignoring issues in relation to pollution emissions. Therefore, to be on the path of sustainable development, Thailand should have the appropriate indicator. (10)

Where the green GDP has taken into account EMS (Environment Management System) value partially in review and assessment stages as a green growth numerical result, the adoption of green GDP in the country-based environmental management system is very promising. A key factor in ensuring the sustainability cycle's performance improvement is the green GDP, which is proportional to the sustainability pillars. It was also discovered that the green GDP formula and indicators were compliant with EMS regulations. In Indonesia, the green GDP has been implemented through a pilot project in central and north Kalimantan. This project has proven to be essential in gathering data that will be used to develop regional environmental regulations in Bandung and to provide useful insights into the roadmap for Bali's green tourism growth. Finland demonstrated the potential for green growth on a global scale, ranking with China as having one of the highest green GDPs and prioritising pollution control over rapid economic expansion. Because the country takes time for indicators trial and error, the country that recently started to implement green GDP in different regions impacted to less-valid national green GDP. As a result, Finland's green growth, which has concealed environmental degradation, resource depletion, and environmental improvement efforts as the three main green GDP sub formulas that subtracted the conventional GDP, has recommended being reflected by international communities through the challenge of green GDP indicators. To balance the environmental-related activity or programme in a country-based setting, extra estimation of the improvement value in environmental resources appears to be feasible. The valuation value takes into account the beneficial cascade effect on the regulation in enhancing the sustainability cycle. (11)

### 1.3 OBJECTIVES AND METHODOLOGY

- The objective of this paper is to analyze how air pollution is impacting GDP growth Rate in India.
- Air Pollution as an environmental cost for Green GDP of India.
- Published reports on air pollution by the Government of India have been taken for understanding this impact.

#### 1.4 ANALYSIS OF STUDY

The huge burden of illness and mortality brought on by air pollution, as well as the significant negative economic effects from lost output, may make it difficult for India to achieve its goal of having a \$5 trillion economy by 2024. State-specific measures that successfully reduce air pollution in India would have a significant positive impact on the economy and human health. (12) It is important to consider the negative effects air pollution has on GDP growth. Unless they are tackled as a top priority, India's high burden of air pollution and its significant negative impact on output could impair the country's overall economic development and social well-being.

Air pollution was responsible for 1.7 million deaths in India in 2019, accounting for 18% of all fatalities there. Between 1990 and 2019, the death rate in India related to household air pollution decreased by 64%, while the death rate attributable to outdoor ambient air pollution grew by 115% over this time. In 2019, the economic loss resulting from lost output from early deaths and sickness caused by air pollution in India was 1.4% of GDP, or INR 260,000 crores (US\$ 36.8 billion). The states in northern and central India had greater economic losses as a share of their respective state GDPs, with Uttar Pradesh and Bihar suffering the greatest losses (2.2% and 2%, respectively). India would benefit from increasing its investments in state-specific air pollution management measures since doing so will help it achieve its goal of having a \$5 trillion economy by 2024. (13)

There are several direct ways that air pollution can have an impact on GDP, including increased health care expenses, early mortality, and welfare losses. Indirect losses like lower labour or employee productivity and lower consumer expenditure, however, also contribute to GDP losses. Out of these, the organisation is immediately impacted by staff productivity, customer traffic, and premature mortality. Employers in India suffer a loss of over USD 6 billion yearly, or 1.3 billion working days, as a result of air pollution. (14)

Due to air pollution, employees' physical and mental performance suffers. Business leaders predict that on days with significant pollution, staff productivity drops by 8–10%, costing USD 24 billion in 2019. Employees frequently make up for this by putting in excessive hours. The production of the whole Indian pharmaceutical sector is lost in this loss. Employee burnout, attrition, and the challenge for HR managers to recruit top talent are some of the costs that continue to be incurred when employees work longer hours to make up for lost productivity. For industries that depend heavily on complex mental processes for output, such as investment banking and software development, the lower cognitive functioning of pollution has a 7x greater impact. (15) India's ability to maintain a strong consumer economy is weakened by air pollution, by reducing consumer spending by 1.3%, costing USD 22 billion in 2019. Customers avoid being exposed to contaminants when air pollution increases. Sectors with a higher proportion of discretionary purchases are particularly affected because there are fewer online alternatives and lost time results in lost

revenue. Clothing and food, including restaurants, account for 50% of total expenses. In India, air pollution is a factor in 18% of all fatalities. Due to air pollution brought on by deaths, India wasted 3.8 billion working days in 2019, at a cost of USD 44 billion. Premature mortality not only decimates our existing workforce but also our future workforce, with children under the age of one accounting for 34% of the overall damage. India's population will be more susceptible to air pollution as its median age rises from 27 in 2019 to 32 in 2030, raising the possibility of an underutilised labour force. A total impact of USD 95 billion, or -3% of India's 2019 GDP, results from this. The loss is similar to 1.5 times India's yearly defence budget (-2% of GDP), 2 times the nation's annual public health expenditure (1.6-2.2% of GDP), and around one-third of its tax collection (-10% of GDP). Every year, air pollution costs Indian firms \$40 billion, or 40% of their total expenditures. (15)

According to a World Bank estimate, air pollution costs India \$550 billion, or nearly 8.5% of its GDP. The risk of desertification and land degradation is significantly increasing as a result of our disdain for the environment in the sake of growing economic development. Unsurprisingly, projections indicate that if these trends persist unchecked, our food production could decrease by 10–40%. Although natural resources like clean water and air are self-regulating, they must be managed responsibly to prevent depletion. Understanding the environmental impact of our economic operations, which also needs to be taken into account in our GDP, is essential for this. (16)

The GDP calculation does not take into account environmental damage, water contamination, or resource depletion. It was claimed that pollution and other undesirable byproducts do not lower GDP. The only alternative that can accurately and transparently depict the welfare growth of any nation is green GDP. The term "Green GDP" refers to an alternative measure of economic growth that integrates environmental effects by accounting for resource depletion and environmental deterioration. As a result, it takes into account how the environment affects a nation's productivity. (17)

To date, households have not been required to pay anything for the privilege of emitting the carbon they produce at home. It is impossible to grant private property rights to the open atmosphere because emissions diffuse through the atmosphere. Consumables with "carbon content" are therefore underpriced compared to what they should be. Experts today believe that any more global increases to the atmospheric carbon stock will be detrimental. Even if we now talk about the "market for carbon," such a market can only exist if national governments place limits on the total amount of emissions. These are the areas where the Green GDP estimate should be cautious. (18)

## 1.5 CONCLUSION

Users of the SEEA (System of Environmental Economic Accounting) can create a wide range of indicators, including those for the Global Biodiversity Framework and the Sustainable Development Goals. In addition, it can help develop a new kind of green GDP that takes both advantages and disadvantages into account. India must therefore determine its "Green GDP" in order to account for the worth of the environment in its development. (19) In the case of India, the country's development record is being hampered by a deteriorating environment and decreasing natural resources, necessitating urgent steps

toward a sustainable and decarbonized economy. The 2020 Environmental Performance Index rates nations according to their approaches to waste management, air quality, biodiversity and habitat, fisheries, ecosystem services, and climate change. India, one of the top six global economies, was ranked 169th out of 180 nations, trailing in terms of green growth. According to each category, India comes in at position 179 for air quality, 139 for sanitation and drinking water, 103 for waste management, 149 for biodiversity and habitat, 36 for fisheries, and 37 for climate change. Concern should be expressed over India's poor performance given that 1.3 billion people worldwide have significant environmental health concerns. The Indian economy needs to expand in order for it to meet its development objectives. The natural development of the economy could be harmed by the depletion of natural resources such as minerals, water, and fossil fuels, which would increase the cost of fuel, energy, and raw materials. Economic growth without development is useless. Economic resource depletion has a negative impact on GDP calculation and must be taken into account. The influence of resource depletion and rising pollution on a country's ability to produce in the future is not taken into consideration, nor are the various national resources explicitly included as assets in the GDP. All of these elements combined to create the need for a more accurate economic indicator that would reflect the genuine mood toward resources and their use in accordance with sustainable development principles. Thus, the concept of "green GDP" was developed, and theoretically, it could address any query that the traditional GDP was unable to address. Green GDP is regarded as a reliable economic assessment instrument. (20) The country not only develops but also thrives when qualitative results are turned into quantitative results.

## REFERENCES:

1. B-0001:J.04~2017~1564990977139/J.04~2017~1564990977139.  
pdfhttps://seea.un.org/news/rise-fall-and-rethinking-green-gdp
2. https://www.jagranjosh.com/general-knowledge/do-you-know-the-concept-of-green-gdp-and-ecological-debt-1514295005-1
3. https://thehimalayantimes.com/opinion/green-gdp-sustainable-development
4. https://economictimes.indiatimes.com/news/politics-and-nation/delhi-had-highest-per-capita-economic-loss-due-to-air-pollution-in-2019-lancet/articleshow/79863576.cms?from=mdr
5. https://byjus.com/free-ias-prep/green-gdp/
6. https://www.researchgate.net/publication/260407853\_Green\_GDP
7. https://en.m.wikipedia.org/wiki/Air\_pollution\_in\_India
8. https://etalpykla.lituanistikadb.lt/object/LT-LD
9. https://www.researchgate.net/profile/Jose-Morais-11/publication/341219111\_PERCEPTIONS\_ON\_LEARNING\_METHODOLOGIES\_IN\_HIGHER\_EDUCATION\_A\_COMPARATIVE\_STUDY\_pp\_358-366/links/5eb452324585152169be6610/PERCEPTIONS-ON-LEARNING-METHODOLOGIES-IN-HIGHER-EDUCATION-A-COMPARATIVE-STUDY-pp-358-366.pdf#page=90
10. https://www.researchgate.net/profile/Chalanda-Sonthi-2/publication/35134255\_Concepts\_and\_empirical\_calculation\_of\_the\_green\_GDP\_for\_Thailand/links/5f4e71b692851c250b8592d5/Concepts-and-empirical-calculation-of-the-green-GDP-for-Thailand.pdf

11. <https://www.ojs.serambimekkah.ac.id/jse/article/view/2314/1864>
12. <https://www.sciencedirect.com/science/article/pii/S2542519620302989#:~:text=The%20total%20health%20expenditure%20in,of%20air%20pollution%20is%20high.>
13. <https://phfi.org/health-and-economic-impact-of-air-pollution-in-india/>
14. <https://www.financialexpress.com/lifestyle/science/how-air-pollution-causes-the-degradation-of-a-nations-gdp/2644052/>
15. [https://s40026.pcdn.co/wp-content/uploads/01042021\\_Business-Cost-of-Air-Pollution\\_Long-Form-Report.pdf](https://s40026.pcdn.co/wp-content/uploads/01042021_Business-Cost-of-Air-Pollution_Long-Form-Report.pdf)
16. <https://www.iasparliament.com/current-affairs/the-case-for-green-gdp>
17. <https://www.ijeess.net/images/pdf/FloraMerko1EsmeraldoXhakolli1HenrietaThemelko2FlorjonMerko3THEIMPORTANCEOFCALCULATINGGREENGDPINECONOMICGROWTHOFA COUNTRY–CASESTUDYALBANI Apage469-474;-e449677ebc.pdf>
18. <https://www.iasparliament.com/current-affairs/the-case-for-green-gdp>
19. [https://www.cbd.int/financial/hlp/doc/literature/Green\\_National\\_Accounts\\_in\\_India\\_1may13.pdf](https://www.cbd.int/financial/hlp/doc/literature/Green_National_Accounts_in_India_1may13.pdf)
20. <https://moderndiplomacy.eu/2022/04/03/green-gdp-indias-need-of-the-hour/>  
<https://www.vskills.in/certification/blog/what-is-green-gdp/>

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