



Chhattisgarh Links Forest Ecosystem to Green GDP

For Prelims: [Gross Domestic Product](#), [Green GDP](#), [India State of Forest Report 2023](#), [Sustainable Development Goals](#), [System of Environmental-Economic Accounting](#), [World Bank](#), [Soil erosion](#)

For Mains: Green Gross Domestic Product, Sustainable Development and Economic Growth, Environmental Economics and Policy, India's Forestry and Environmental Policies

Source: [TNIE](#)

Why in News?

Chhattisgarh has become the **first state in India to link its forest ecosystem to the [Green Gross Domestic Product \(Green GDP\)](#).**

- This approach highlights the **economic and environmental value of forests**, focusing biodiversity conservation and climate change mitigation.
- The initiative aligns with the broader goal of achieving [sustainable development](#) while fostering economic growth.

What is Green Gross Domestic Product (Green GDP)?

- **Traditional GDP:** A measure of the **annual value of goods and services** produced within a country, [GDP](#) has been the global standard since 1944.
 - **Simon Kuznets**, the economist who created GDP, stated that **GDP doesn't reflect a nation's true welfare**, as it ignores factors like environmental health and social well-being.
- **Green GDP:** It is a **modified version of traditional GDP** that accounts for the **environmental costs of economic activities**.
 - It incorporates factors such as **natural resource depletion, environmental degradation, and pollution into the economic output**, offering a more comprehensive picture of a nation's true wealth.
- **Need for Green GDP:** Traditional GDP overlooks **sustainability, environmental degradation, and social welfare**. It focuses solely on **economic output** without considering the long-term consequences on the environment.
 - Green GDP, on the other hand, ensures that **economic growth aligns with sustainable practices**, reflecting the true cost of environmental damage and the depletion of natural resources.
- **Formula:**
 - According to the **World Bank**, **Green GDP = NDP (Net Domestic Product) – (Cost of Natural Resource Depletion + Cost of Ecosystem Degradation)**.
 - Where $NDP = GDP - \text{Depreciation of Produced Assets}$.
 - **Cost of Natural Resource Depletion** refers to the value lost due to overuse of natural resources.

- **Cost of Ecosystem Degradation** refers to the value lost from environmental damage such as pollution and deforestation.

GDP AND RELATED TERMS

GROSS DOMESTIC PRODUCT (GDP):

- Total monetary value of all finished goods/services produced within a country in one year
- 3 methods to calculate GDP - **expenditures, production, income Method**
- Provides an economic snapshot to estimate a country's economy/growth rate
- GDP is not an accurate measure of the overall living standard/well-being of a country
- $GDP = \text{Goods and services consumed (C)} + \text{Investments (I)} + \text{Govt expenditures (G)} + (\text{Exports (X)} - \text{Imports (M)})$

GDP	Measures economic activity within the physical borders of a country Producers can be native or foreign-owned entities
GNP	Measures overall production of people/corporations native to a country Includes those based abroad (by natives) but not foreign-owned domestic production
GNI	Sum of all income earned by citizens/nationals of a country (domestic + abroad) GNI = domestic income + indirect business taxes + depreciation + net foreign factor income

Nominal GDP (NGDP)

- GDP at current prices
- Includes inflation/pace of rising prices
- Used to compare different quarters of output (in same year)

Real GDP (RGDP)

- Inflation-adjusted GDP
- More accurate reflection of the output of an economy than NGDP
- Used to compare GDP of 2 or more years
- Calculated using a GDP Price Deflator
($RGDP = NGDP \div \text{GDP Deflator}$)

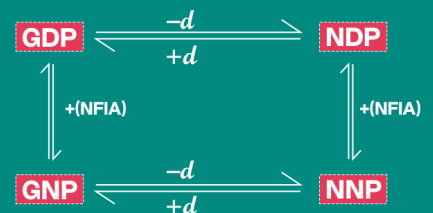
$$\text{GDP Price Deflator} = (NGDP \div RGDP) \times 100$$

Example: Assume a country that only produces bread

Year 2021: It produced 100 units of bread @ price Rs 10 (each)
Then, GDP @ current price - Rs 1000

Year 2022: It produced 110 units of bread @ price Rs 15 (each)
Then, GDP @ current price - Rs 1650

RGDP for year 2022 (base year - 2021) = $110 \times \text{Rs } 10 = \text{Rs } 1,100$
Here, **GDP Deflator** would be - $1,650 \div 1,100 = 1.50$ (or 150%)



d = depreciation

NFIA = Net Factor Income from Abroad

NNP = Net National Product

NDP = Net Domestic Product

- **Factor Cost (FC) = Total value of the inputs that go into manufacturing a good**
 - $\text{Market Price (MP)} = \text{Factor Cost} + \text{Indirect Taxes} - \text{Subsidies}$
- $\text{GDP at FC} = \text{GDP at MP} + \text{Subsidies} - \text{Indirect Taxes}$
 - $\text{GDP at MP} = \text{GVA} \times \text{MP}$
 - GDP at MP is the measure of GDP in India
- **Gross Value Added (GVA) = GDP + subsidies on products - taxes on products**



Drishti IAS

Note: In 2024, **Uttarakhand** became the first state globally to launch the **Gross Environment Product (GEP) Index**. This index goes beyond traditional ecosystem services to also measure contributions made to the environment.

- The GEP Index incorporates factors such as **tree species value, survival rates, and conservation efforts**, offering a comprehensive approach to assessing ecosystem growth.

What Does the Green GDP Link With Forests Mean for Chhattisgarh?

- **Role of Forests in Chhattisgarh:** Chhattisgarh recorded the highest increase in forest cover in **India State of Forest Report 2023**, growing by 683.62 sq km.
 - The state's total forest cover now spans **44.2% of its geographical area**, playing a key

- role in absorbing **carbon dioxide**, contributing significantly to climate change mitigation.
- Chhattisgarh's natural resources support the **livelihoods of millions**, with forest products like **tendu leaves, lac, honey, and medicinal plants** being vital to the **rural economy**.
- Chhattisgarh's forests are vital to local tribal traditions, and preserving cultural heritage, with **sacred groves like Sarna and Mandar** revered as divine abodes.
- **Implications of linking Forests with Green GDP:** This approach highlights the **economic and ecological value of forests**, fostering a balance between development and sustainability.
 - By prioritizing the preservation of natural resources, the **state aims to ensure the long-term health** of its environment for future generations.

How Does Green GDP Promote Sustainable Development?

- **Sustainable Resource Use:** By accounting for environmental damage, Green GDP promotes **SDG 12 (Responsible Consumption and Production)** by encouraging more sustainable production and consumption patterns.
 - Green GDP shifts the focus from **merely maximizing economic output** to preserving the **natural capital that supports long-term prosperity**.
- **Climate Change Mitigation:** Green GDP supports the reduction of **reliance on fossil fuels** and adoption of **renewable energy**, contributing to the fight against climate change aligning with **SDG 13 (Climate Action)**.
- **Biodiversity Conservation:** Green GDP promotes environmental preservation, safeguarding ecosystems and species, aligning with **SDG 15 (Life on Land)** and **SDG 14 (Life Below Water)**.
 - It enables policymakers to create regulations that balance economic growth with ecological sustainability.
- **Incentivizes Green Investments:** Green GDP promotes investment in **sustainable technologies and practices**, fostering **green jobs and industries**.
 - It supports **SDG 8 (Decent Work and Economic Growth)** by driving inclusive, sustainable economic growth that prioritizes environmental health.

Global Practices of Green GDP

- **United Nations:** The **System of Environmental-Economic Accounting (SEEA)**, developed by the **United Nations**, integrates **economic and environmental data** to offer a comprehensive view of the interrelationships between the **economy and the environment**, focusing on environmental assets and their benefits to humanity.
- **European Union:** The **EU's Beyond GDP initiative** integrates **sustainability metrics** into economic assessments, focusing on the long-term health of the planet.
- **World Bank: Wealth Accounting and the Valuation of Ecosystem Services (WAVES)** is a **World Bank-led partnership** promoting sustainable development by integrating **natural resource accounting into development planning**.
- **Bhutan:** **Bhutan's Gross National Happiness (GNH)** framework places ecological sustainability at the core of its development policies.
- **Other Countries:** **China, Norway, and the US** have experimented with incorporating environmental costs into their national accounts.

What Challenges Does the Green GDP Framework Face?

- **Forest Cover Definition:** The term "forest" under the **India State of Forest Report (ISFR)** includes plantations like **oil palm and rubber**, which can be environmentally **damaging** and may not provide the **same ecological benefits as natural forests**.
 - **Example:** Activities like **palm oil and rubber plantations** often replace **natural forests**, leading to **biodiversity loss, soil erosion, and environmental disruptions**.
 - Treating plantations as forests in Green GDP calculations **can create a misleading picture of a state's ecological health**, compromising the framework's reliability.

- **Political Agendas:** States with low ecological forest value **may manipulate data to secure grants if forest cover becomes a funding criterion**, by prioritizing plantations over natural forests and which can cause ecological harm.
- **Local Body Integration:** Incorporating local bodies, such as **Panchayats, in the Green GDP framework** is challenging due to the **lack of awareness and literacy among leaders at the grassroots level**.
- **Lack of Clarity on Benefits:** The financial benefits of Green GDP accounting lack clarity on how they will reach local communities, such as **tribes and forest dwellers**, who have traditionally **preserved forests for generations**.
- **Methodological Differences:** There is **no single, universally accepted method for calculating Green GDP**, making it difficult to compare across countries.
 - Valuing environmental costs and services is a complex process and can vary depending on local conditions and priorities.

Way Forward

- **A Clear Standard Framework:** Governments need to adopt a consistent and transparent methodology for calculating Green GDP, ensuring clarity in what constitutes environmental services and costs.
- **Public Scrutiny:** To avoid manipulation, data must be transparent and open to scrutiny by analysts and critics.
- **Prioritize Quality Over Quantity:** Focus on restoring native forests and ecosystems for better carbon sequestration and biodiversity protection.
- **Public Awareness:** Educate communities about the benefits of Green GDP to drive sustainability efforts. **Incentivizing local communities** for forest protection ensures equitable and effective implementation.

Drishti Mains Question:

Explain Green GDP, why is it crucial for countries like India in promoting sustainable development?

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Mains

Q. Explain the difference between computing methodology of India's Gross Domestic Product (GDP) before the year 2015 and after the year 2015. **(2021)**