

## Green Economic Policies, Strategies & Initiatives of India

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### Abstract

Sustainable economic development is crucial to secure human welfare and eliminate social inequality. Global leaders have recently made progress towards reaching an agreement on how to convert the current unsustainable economic trends into sustainable green economic growth. The viability of the green economy depends on several variables, including governmental policy, the business climate, and environmental concerns. The presented paper examines the implementation of green economic policies and analyses government strategies and initiatives taken by the government at the national level. The study uses a descriptive-analytical approach. The study finds India is putting many regulations and initiatives into place to encourage the effective use of energy in a variety of economic areas, including green building, equipment, farming, mobility, and fuels. These green growth initiatives lower the economy's carbon intensity and provide a sizable number of green jobs.

**Keywords:** Green Economy, Sustainable development, Initiatives, Policies, Economic Growth, Green Growth

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### 1. Introduction

At the 2012 United Nations "Rio+20" summit, there was a lot of discussion about the idea of a green economy, which emerged from the study of environmental economics. It has already become a popular term in the global conversation on ecological economics. Low carbon emissions, resource efficiency, and social inclusion define a green economy. Government and private investments aimed at decreasing emissions of carbon and environmental damage, promoting the efficiency of energy and resources, and safeguarding ecological services and biodiversity are the driving forces behind the creation of revenue and job possibilities in a green economy.

The sustainable development idea put forth by the Brundtland Commission is closely related to the green economy [2]. According to advocates of sustainable development [1,8], Economic policies are skewed towards

ensuring prosperity through destroying natural resources, making sustainable development difficult. As outlined in the study on the green economy by the United Nations Environment Programme (UNEP), the pursuit of environmental sustainability and economic progress necessitates trade-offs. Nevertheless, regulatory modifications that favour Investing in sustainable economic development not only benefit the environment but also create opportunities for growth and employment. These adjustments, when put into action, can rectify pricing policy flaws. This, in turn, can create a path towards a more sustainable and equitable future. [1]. The objective is to "recouple" environmental preservation from economic growth by seeking out synergies rather than trade-offs [9,10].

Along with UNEP, other global organisations have embraced the green economy or green growth paradigm. The concept of green growth was introduced in 2005 during the 5th Ministerial Conference on Environment and Development in Asia and the Pacific. The conference was organized by the United Nations Economic and

Social Commission for Asia and the Pacific (UN ESCAP). [3]. In order to establish a green economy, a green growth approach is necessary as per the Seoul Initiative on Environmentally Sustainable Economic Growth (Green Development). [4]. The Global Green Growth Institute (GGGI) was founded to foster robust, equitable, and economic sustainability in developing nations and emerging countries [5]. The World Bank has advocated for green growth as a means of improving the standard of living in developing countries, as stated in its report "Inclusive Green Growth: The Pathway to Sustainable Development." The report also advocates for improved economic performance measurement that considers the advantage of natural resources. [6].

The green economy has taken on various forms around the world, depending on the national economy and political objectives. Death [11] has identified four main green economic themes: green resilience, growth, transformation, and revolution. Green resilience focuses on community-based programs that aim to address environmental issues at the local level. This approach is seen as more technical and does not require a significant transformation of the existing economic system. On the other hand, discourses on green transformation and revolution aim to challenge the belief that economic development is the sole means to keep our economy going. The most widely adopted form of green economy, green growth, aligns with neoclassical economic theories. Strategies such as the carbon market, bioprospecting, and the commoditization of ecosystem services, which Büscher and Fletcher refer to as "accumulation by conservation," are included in this approach [12].

The alignment of all four green economy discourses on the position of the state as the principal actor unifies them and distinguishes them from the discourse on sustainable development [11]. Discussions of Green economies can be viewed as state remedies to financial emergencies because they seek to reinstate government control over the economy. In their respective publications [1,6], the World Bank and UNEP both emphasize the need for stronger government agencies, underscoring the significance of state intervention in the economy. Governments can play a vital act in creating a carbon neutral by taking certain steps. These include the elimination of environmentally harmful subsidies, the establishment of green government contracting norms, the encouragement of investment, and the addressing of market failures. By doing this, they can assist in rerouting capital towards businesses that generate fewer greenhouse gas emissions, make better utilize of natural deposits, and protect the environment.

There are concerns regarding the green economy's prioritization of economic growth over social justice and environmental protection. This could result in similar issues faced by sustainable development in trying to achieve a harmonious balance between the economy, the environment, and society [13].

## 1.1 Reason for the study:

The green economy has arisen during the last ten years as a vital policy framework for promoting sustainable development in Both advanced and emerging nations. It is an interesting model for building societies that are more socially inclusive, less resource-intensive, and low-carbon and less detrimental to the environment. This analysis recognises these existing issues and offers broad recommendations for strengthening the measurement of changes to the economy that are more environmentally friendly.

## 1.2 Scope of the study:

The paper provides specific recommendations for developing countries to gradually implement environmentally friendly technologies, considering the inadequacies of policymaking and implementation institutions, as well as the underdeveloped state of innovation systems and lock-in issues.

## 1.3 Objectives of the study:

This study is based on the following objectives:

- To analyse the green economic policies of India.
- To examine the green economic strategies of the Indian government.
- To evaluate initiatives taken by the government for green growth.

## 1.4 Methodology of the study:

The presented paper applied analytical as well as descriptive research for the study. We used different government reports and policy papers, several research articles, journals etc.

## 2. Policies for Achieving a Green Economy

The key topics of the Union Budget for 2023 are the seven "Saptarishi" priorities: inclusive development, closing the gap, infrastructure and investment, maximising potential, youth power, the financial industry, and green growth. The finance minister used the words "green" and "sustainable" a lot in her address about the budget. She opined that green growth might be revolutionary during Amrit Kaal. Green growth plans' primary goal is to ensure that natural resources can sustainably realise their full economic potential.

Green growth is essentially a strategy for economic expansion that prioritises sustainable growth while minimising negative environmental effects. India was ranked 169th out of 180 nations in the 2022 Environment Performance Index. Rankings were based on things like

climate change, biodiversity and habitat, waste management, air quality, biodiversity, and fisheries. Even though it has a smaller GDP than many other minor economies, India has the fifth-largest economy in the world.

The Indian Prime Minister's ambition for "LiFE" (Lifestyle for the Environment) aims to inspire sustainable living and lead the world into a green industrial and economic transition. The country is working hard to achieve "Panchamrit" and net-zero carbon emissions by 2070, which will guide other nations in reducing their carbon footprint.

To achieve this goal, India is implementing numerous policies and projects to promote the efficient use of energy in various economic sectors such as green buildings, equipment, farming, mobility, and fuels. These green growth strategies create a significant number of green jobs and reduce the carbon intensity of the economy.

Some of the major policies of the government for green economy are:

## 2.1 National Solar Mission

The National Solar Mission, also known as the Jawaharlal Nehru National Solar Mission, was launched in January 2010 with the aim of reducing the harm caused by power production to the environment. Its goal is to increase the initial solar energy capacity of 20 GW to 100 GW by the year 2022 and to develop a solar capacity of 280 GW by 2030. The mission also aims to promote the use of both on-grid and off-grid power, as well as encourage the use of greener fuels.

## 2.2 National Mission for Enhanced Energy Efficiency

In 2011, the Indian government launched the National Mission for Enhanced Energy Efficiency (NMEEE) to promote energy efficiency. The Energy Conservation Act of 2001 played a significant role in the establishment of this mission. The NMEEE has a framework for certifying excess energy savings and requires large energy-consuming industries to reduce energy use. It also creates market-based exchanges for these savings. The mission has introduced innovative approaches to reduce the cost of energy-efficient machinery and goods across various industries.

## 2.3 National Mission on Sustainable Habitat

One of the eight climate missions under India's NAPCC is the National Mission on Sustainable Habitat, overseen by the Ministry of Urban Development since 2010. The mission aims to address climate change concerns and establish sustainable habitat requirements for successful development plans. This includes the creation of

municipal development plans that consider adaptation and mitigation, as well as the development of comprehensive mobility plans that promote long-term, cost-effective, and energy-efficient transport networks for local governments.

## 2.4 National Water Mission

India's Prime Minister launched the National Water Mission in 2008 with the aim of promoting water conservation, reducing wastage, and ensuring fair distribution. The mission includes a comprehensive study of the impact of climate change on water resources and a publicly accessible database of water resources. One of the primary objectives of the mission is to increase water use efficiency by 20%. It also focuses on encouraging sustainable methods of water management, water augmentation and conservation, improving infrastructure planning and development to enhance water security, promoting coordinated basin-level management of water resources, and establishing a database of water resources and their usage.

## 2.5 National Mission for Sustaining the Himalayan Ecosystem

The National Mission for Sustaining the Himalayan Ecosystem (NMSHE) is one of the eight missions that are part of the National Climate Change Action Plan (NAPCC). NMSHE was launched in June 2010 and was formally approved by the Union Government in 2014. The mission falls under the Department of Science & Technology, Ministry of Science & Technology.

The main purpose of NMSHE is to preserve the biodiversity in the Himalayan region and prevent the melting of the Himalayan glaciers. Specifically, the mission focuses on the rapid development of four national capacities that deal with the following issues: human and knowledge capacities, institutional capacities, capacities for evidence-based policy building, and governance—continuous self-learning for balancing between the forces of Nature and the actions of mankind.

## 2.6 National Mission for a Green India

The Green India Mission (GIM) was established in 2014 under the National Action Plan on Climate Change (NAPCC) with the main aim of preserving, improving, and increasing India's dwindling forest cover. The mission focuses on enhancing natural processes such as carbon sinks and is built upon the Prime Minister's Green India initiative, which aims to afforest 6 million hectares to achieve the country's target of a 33% increase in forest area. The Joint Forest Management Committees constituted under State Departments of Forests, are responsible for implementing the mission in degraded forest areas.

## 2.7 National Mission for Sustainable Agriculture

The National Mission for Sustainable Agriculture (NMSA), established in 2014-15, aims to increase the productivity, sustainability, profitability, and climate resilience of agriculture. To achieve this goal, the mission promotes location-specific integrated/composite agricultural systems that enhance productivity, sustainability, market value, and resilience to climate change. It also emphasizes conservation strategies for soil and moisture, comprehensive control of soil health, and efficient methods for managing water.

## 2.8 National Mission on Strategic Knowledge for Climate Change

Established in 2014-15, the National Mission for Sustainable Agriculture (NMSA) aims to increase the productivity, sustainability, profitability, and climate resilience of agriculture. This mission promotes location-specific integrated agricultural systems that enhance productivity, sustainability, market value, and resilience to climate change. Additionally, it emphasizes conservation strategies for soil and moisture, comprehensive control of soil health, and efficient methods for managing water.

The National Mission on Strategic Knowledge for Climate Change is one of the eight national missions that make up the NAPCC's core. This mission was established in 2008 and is the responsibility of the Ministry of Science & Technology's Department of Science & Technology. Its goal is to collaborate with the international community on research and technological advancement, and it is sponsored by a network of organizations and academic institutions particularly concerned with climate change.

The mission has a research agenda of its own, along with a Climate Research Fund. It also helps commercial enterprises develop cutting-edge technology for adaptation and mitigation.

## 2.9 Green Economic Policies at the International Level

### 2.9.1 International Solar Alliance (ISA)

a treaty-based intergovernmental institution that promotes the use of sustainable energy and works to harness solar power's advantages.

### 2.9.2 Coalition for Disaster Resilient Infrastructure (CRDI)

A worldwide partnership to advance the adaptability of infrastructure to natural disasters and climate change risks was established by India's Prime Minister in the time of the UN Climate Action meeting in 2019 in New York.

### 2.9.3 Leadership Group for Industry Transition (LeadIT)

During the 2019 UN Climate Action Summit, Sweden and India launched an initiative supported by WEF. The initiative unites nations and businesses that are committed to fulfilling the Paris Agreement. The National Action Plan on Climate Change (NAPCC) implemented via the Indian government is a significant step towards facing environmental degradation and global warming. The plan's focus on sustainable development and climate change is commendable. However, it is crucial to ensure that the eight defined missions of the NAPCC are effectively accomplished and regulated by credible bodies. When discussing climate change, equal priority must be given to energy, water, the Himalayan Ecosystem, green India, and agriculture.

## 3. Green Economic Strategies of India:

To fully leverage the benefits of the intersection between environmentally sustainable growth and poverty reduction, it is crucial to tailor the strategies for promoting greener growth according to the unique circumstances of each country. Additionally, green growth strategies acknowledge that relying solely on GDP as the primary indicator of economic progress often fails to account for the valuable role of natural resources in creating wealth, promoting good health, and improving overall well-being.

Green growth, which includes green credits, clean energy, Eco mobility, and ecological agriculture, was one of the seven prime concerns of the most recent budget highlighted.

Three pillars serve as the foundation for India's green growth and energy transmission:

1. Expanding the use of renewable energy,
2. Lowering the economy's reliance on fossil fuels,
3. quickly transforming the nation's economy to one based on petrol.

The plan in the budgets of the last few years featured the PM KUSUM Yojana, actions for sun energy production, rooftop solar initiatives, coal gasification, and battery storage.

Since 2014, India has been adding renewable energy capacity at the quickest rate among large economies. India met its goal of having 40% of its installed electrical capacity proceed with non-renewable fuels nine years advance than expected.

India said that it would like to reach a 20% ethanol blend in petrol by 2025–2026 rather than 2030 and that it has already reached its 10% ethanol blend goal in fuel five months earlier than expected. By 2030, a 500 GW capacity will be attained. There are now more options for investors thanks to the introduction of E20 fuel and the focus on biofuels.

To promote water-based transportation and more environmentally friendly freight handling, India prioritises the development of waterways.

India has a target of reaching 125 gigawatt hours of battery storage in the following 6-7 years. Funding for battery energy storage systems has been started in order to accomplish this. The viability gap funding (VGF) programme will aid systems with a 4,000 MWH capacity. For India to reach its Energy Storage Obligation goals, the VGF must provide help, and pumped hydro must receive more attention.

India is making significant strides towards achieving its ambitious target of producing 5 MMT of green hydrogen by 2030 under the National Green Hydrogen Mission. The government has recognized the potential of green hydrogen as a game-changer for the country's energy sector and therefore has set aside a budget of Rs. 19,000 crores to encourage private sector participation in this area.

The National Green Hydrogen Mission targets to encourage the creation and usage of environmentally friendly hydrogen technologies. across the country, thereby reducing India's dependence on reducing carbon emissions and utilising imported fossil fuels. It seeks to establish a vibrant ecosystem for green hydrogen production, storage, and utilization, and strengthen the country's energy security while providing economic opportunities for the private sector. With the government's support and the private sector's involvement, India is well on its way to becoming a global leader in green hydrogen production.

The aim of the "LIFE" (Lifestyle for Environment) initiative is to encourage people to adopt an environmentally conscious lifestyle worldwide. India is taking steps towards achieving a green industrial and economic system, with a target of achieving carbon neutrality by 2070 through the implementation of the Panchamrit plan.

## 4. Government Initiatives for Green Development:

One of the top priorities of the Union Budget 2023-24 is green growth, which aims to promote sustainable energy sources, and environmentally friendly agriculture, and launch the nation's green industrial and economic transition.

The Union Budget for 2023–24 includes several initiatives and projects, among these are the Green Hydrogen Mission, Coastal Shipping, Energy Storage Projects, Renewable Energy Evacuation, Green Credit Programme, PM-PRANAM, GOBARDHAN Scheme, Bhartiya Prakritik Kheti Bio-Input Resource Centres, MISHTI, Amrit Dharohar, and Vehicle Replacement.

Through the advancement of modern reforms and the identification of answers to present problems, it is

intended to increase the impetus for green growth in the nation.

The budget's green energy measures have a significant impact on positioning India as a market leader in the field. Since 2014, among the world's major economies, India has added renewable energy capacity at the highest rate.

The following are some of the key projects supporting India's green growth:

### 4.1 The Green Hydrogen Mission

The Hydrogen Energy Mission is a project that aims to produce hydrogen using renewable energy sources, with the potential to revolutionise the transportation industry. Additionally, it would encourage India's usage of clean fuels. With the development of technology and the deep-rooted objective of reducing dependence on batteries made of minerals and rare earth components for energy storage, the budget's emphasis on green hydrogen is consistent.

### 4.2 Bhartiya Prakritik Kheti Bio-Input Resource Centres

As part of the Bhartiya Prakritik Kheti initiative, 10,000 Bio-Input Resource Centres will be established to create a distributed national network for producing micro-fertilizers and pesticides. The aim is to assist one crore farmers over the next three years in transitioning to natural farming.

### 4.3 PM-KUSUM

A programme called PM-KUSUM, also known as Pradhan Mantri Kisan Urja Suraksha Evam Utthaan Mah Abhiyan Scheme, attempts to give Indian farmers access to reliable electricity. In keeping with India's Intended Nationally Determined Contributions (INDCs), which aim to install 40% more renewable sources of electric power by 2030, this effort will help meet that goal. The programme has three components and was introduced in 2019.

Element- A involves the construction of 10,000 MW of decentralised renewable energy power plants that are connected to the grid on unused land. Element-B aims to install 17.50 lakh stand-alone solar agriculture pumps, while Element-C seeks to solarize 10 lakh grid-connected agricultural pumps.

### 4.4 Gobardhan Yojana

India has the potential to contribute significantly to the total city gas supply in the country through the production of 1.5 lakh cubic meters of gas and 10 billion cubic meters of biogas from cow dung. The Gobardhan Yojana, an integral part of India's biofuel plan, was launched in

2018 with plans to construct 500 new waste-to-wealth facilities. The Galvanising Organic Bio-Agro Resources Dhan (GOBAR-DHAN) program is executed by the Department of Drinking Water and Sanitation, reporting to the Jal Shakti ministry, and implemented under the Swachh Bharat Mission Gramin-Phase 2.

#### 4.5 India's Vehicle Replacement Policy

As part of its eco-friendly growth strategy, the Indian government recently implemented the Vehicle Scrappage Policy on August 13, 2021. The policy's main objective is to pave the way for a cleaner fleet of cars. The government fully supports this initiative, as it aims to replace older vehicles on Indian roads with newer and more efficient models. According to the new policy, both passenger and commercial vehicles that are over 20 years old if they fail the fitness and emission testing, will be discarded. The policy's numerous objectives include reducing emissions, creating job opportunities, and boosting the demand for new cars. The Reuse, Recycle, and Recovery concept is a breath of fresh air for our circular economy, as it promotes sustainability and the responsible use of resources.

#### 4.6 PM-PRANAM

The government is set to provide support to one crore farmers through the Prime Minister's Programme for Restoration, Awareness, Nourishment, and Amelioration of Mother Earth (PRANAM) to help them transition to natural farming. The programme aims to decrease the utilization of chemical fertilisers, encourage balanced chemical usage, encourage eco-friendly development, and curb negative environmental impacts.

#### 4.7 Green Credit Programme

The Environment (Protection) Act will serve as the vehicle to announce the launch of the Green Credit program, a novel initiative designed to incentivize ecologically responsible behaviours among businesses, individuals, and local organizations. The program seeks to promote sustainable practices that minimise environmental impact while mobilising additional resources for green initiatives. By leveraging the power of behavioural economics, the Green Credit program promises to foster a culture of eco-consciousness and encourage meaningful change at all levels of society.

#### 4.8 MISHTI and Amrit Dharohar

MISHTI, or the "Mangrove Initiative for Shoreline Habitats & Tangible Incomes," is a collaboration between MGNREGA, CAMPA Fund, and other funding sources

that aims to plant mangroves wherever it is practical along the shoreline and on salt pan areas.

#### 4.9 Other Investment in Green Energy Projects

The Indian government has set aside Rs. 35,000 crores to focus on capital investments in achieving zero net emissions and sustainable energy goals. This is an effort to minimize greenhouse gas emissions as much as possible and absorb any remaining emissions from the atmosphere through oceans and forests. Additionally, the investment aims to ensure energy security. Under the Public-Private Partnership (PPP) model, Battery Energy Storage Systems with a capacity of 4,000 MWH will receive viability gap funding to shore up projects that would otherwise be financially unviable. The interstate transmission line will cost Rs. 20,700 crores, of which the government will support Rs. 8,300 crores. This transmission line will evacuate 13 GW of renewable energy from Ladakh and integrate it into the national grid.

In order to "encourage optimal use of wetlands, and enhance biodiversity, carbon stock, eco-tourism opportunities, and income generation for local communities," Over the following three years, a new programme called Amrit Darohar will be implemented.

India has a great chance to guide the globe in renewable energy technologies, and it can advance the cause of world peace in addition to creating green jobs.

Additionally, the notion that green growth should be prioritised highlights how India's policymaking as the G20 President for the term has a strong focus on sustainable development.

The budget for 2023–2024 includes non-green growth plans including the building of 50 extra airports, in addition to 100 programmes to improve connectivity in the last mile for industries such as mining & docks. Significant projects including the National Mission on Himalayan Studies, the National Adaptation Strategy, and the National Climate Change Action Plan lack financing sources. As a result, Joshimath and other Himalayan cities are currently experiencing land subsidence.

India must therefore ensure that investment is directed against ecologically sound technology, in addition to identifying and addressing the economic sectors and hotspots of climate damage.

#### 5. Suggestions:

In order to interrupt the cycle of environmental deterioration and resource depletion, green growth techniques are required. To promote a sustainable and healthy lifestyle based on the principles of moderation and restraint.

To encourage green development and progress in India, the following significant initiatives are advised:

- The government should increase forest cover such that it may serve as a carbon sink for a further 2.5–3 billion tonnes of CO<sub>2</sub>.
- Investing in climate-sensitive development sectors, such as agriculture, water resources, the Himalayas, coastal areas, health, and disaster management, is a crucial step towards sustainable and resilient development.
- Policy coherence and interdepartmental coordination are crucial for cross-cutting climate-resilient green growth strategies.
- The government may choose to implement green budgeting in India, allowing all departments to issue environmental budget statements outlining the most significant "green" activities carried out in their respective departments. This would mainstream environmental sustainability in decision-making processes.
- To make it easier to prepare strategies and evaluate current policy initiatives, existing and fresh data must be collected and synthesised.
- The ability to secure funding is essential for putting climate-resilient green growth policies into action.
- The private sector, banking institutions, and development organisations also become crucial in addition to state money.
- In the fields of renewable energy, waste management, renewable energy for cold storage applications, and natural resource management, technology demonstration should be encouraged.
- The implementation of climate-resilient green growth plans requires strengthening the institutional, financial, and technological capabilities of the public sector as well as the nonprofit sector.
- Sector-by-sector analysis of the demands for capacity building becomes crucial. To assist implementation, there must be more interaction between the public and private sectors, along with between research and academics, nonprofits, and government.
- Considering forthcoming socio-economic shifts, such as urbanization and a shift

towards increased manufacturing, it is essential that we prepare and strategize accordingly. To capitalize on opportunities presented by green growth industries, including real estate, construction, and manufacturing, prioritizing skill development and vocational education is paramount.

## 6. Conclusion

India is working towards achieving net zero, but it needs to tackle several critical short-term challenges. As the third-largest energy importer globally, the country is overlaying heightened energy security hazards caused by the sharp increase in tight markets and commodities prices. A lot of consumers struggle with inconsistent electricity supply and utilising conventional fuels for cooking puts people's health at undue risk. The slow financial growth of electricity distribution companies is hindering the sector's rapid modernization. Furthermore, Indian cities experience some of the world's worst air quality due to high pollution levels.

India has implemented several policies to tackle the challenges associated with the change to more efficient and clean technology. There were several initiatives taken by the government during the early 2010s, including the discontinuation of petrol and diesel allowances and the inauguration of electric vehicle allowances. The country's energy efficiency strategy has helped in minimising energy usage and excretion in structure, transportation, and significant manufacturing. There are now millions of homes that are supplied with natural gas for heating and cooking, which has resulted in a shift away from traditional biomass sources, such as burning wood. The Indian government is also laying the groundwork for developing several emerging technologies, including hydrogen, battery storage, low-carbon steel, cement, and fertilisers.

India, with a population of over 1.3 billion, is a significant developing economy. Therefore, its objectives for climate adaptation and mitigation are revolutionary for the world, not just India. NITI Aayog and the IEA have decided to collaborate to help India develop, industrialise, and enhance its citizens' well-being without carbonising.

In the Union Budget 2023-24, the government is focusing on achieving green growth through eco-friendly practices in a variety of sectors, such as agriculture, industry, and renewable energy.

Both the environment and the nation's economy are being badly impacted by the ongoing depletion. Environmental sustainability has shown to be a serious issue in the trajectory of India's anticipated expansion. Budget 2023 therefore focuses on the country's initiatives to promote economic growth while simultaneously conserving the habitat and future generations' access to renewable

resources. This calls for promoting clean energy sources, reducing pollution, improving waste management, and safeguarding wildlife. The goal of green growth in India is to advance sustainable development and find a balance among advancing the economy and protecting the climate.

The government has pushed green growth despite the hard reality of decreasing natural resources, such as water, minerals, and fossil fuels, as India overtakes China to become the world's most populated nation. India's low ranking of 169 out of 180 countries in the 2022 Environment Performance Index highlights the urgent need for action. A recent study estimates that excessive heat in India costs the country 5.4% of its GDP and 167 billion hours of potential labour in 2021. Given that India is projected to experience 314 days of extreme weather in 2022, with heatwaves 30 times more likely due to climate change, green growth is vital for the country's future.

Policymakers often consider green growth, energy efficiency promotion, and renewable energy technologies as goals that complement sustainable development. However, if the loss and degradation of global ecosystems continue to cause a decline in the range of advantages or "services" that these systems provide, as they are exploited for human use and activity, green growth will not guarantee sustainable economic development. Further sustainability and finance issues must be resolved in order to solve this issue. Overcoming a broad range of institutional, governmental, and market shortcomings that prevent the economic significance of this scarcity from being recognised is the sustainability challenge. One of the major challenges we face today is closing the financial gap between the costs of maintaining and conserving ecosystems, and the global benefits that these ecosystems provide to humanity. To tackle this sustainability challenge, we need to take important steps such as improving the economic and scientific analyses of ecological scarcity, evaluating the loss of benefits, and translating the conclusions into effective policies. We can investigate and put into practice several innovative financing techniques, such as global payments for ecosystem services, financial and currency transaction fees, and global financing facilities, to address the finance issue.

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