Academic Journal of Digital Economics and Stability
Volume 4, 2021
ISSN 2697-2212 Online: https://academicjournal.io/

Convalescence of Indian economy through green growth

S. Saumya krishnan[1]

Abstract

Green economy being universal can bring transformative changes to our economy by adopting environment friendly sustainable measures. To achieve this, government priorities has to be shifted and a right balance has to be maintained between our national priorities and our responsibilities towards the larger humanity, of which we are a part. This could be a real challenge to the developing and developed nations but it needs to be resolved urgently by transforming the economy to the green frontier. This paper highlights about the present status of green economy in the Indian context and the initiatives taken to sustain the ecosystem in consilience with economic growth. By addressing the significance of green economy this paper points out certain policies that need to be adopted in order to bridge the aperture between economy and environment so that twain could prosper.

Key words. Green economy, balance, economic growth, status.

[1] Assistant professor of Genetics, Department of genetics,
Acharya Bangalore B School (Bangalore University, India)

Introduction

With the magnification in the liberalization and globalisation across the world there is greater need to accentuate sustainable economy as well, in order to counter the escalating environmental devastation and climate change as experienced by the entire mankind in the recent years. This stipulates that the economic model needs to change. With the increase in industrialisation the resources are also getting depleted at a faster rate than the regeneration which leads to the rise in extraction cost and ultimately leading to the economic contraction Therefore economic policies maintaining a sustainable stock of resources are needed. Green growth strategies are needed to promote sustainable growth and to break the pattern of environmental degradation and natural resource depletion [1]

The term 'Green Economy' was first coined in 1989 report for the Government of the United Kingdom by a group of leading environmental economists. Till 2008, with the exception to be in report title there was no further reference to this term. In 2008 the term Green Economy was revived in response to multiple global crisis. UNEP launched Green Economy Initiative to provide analysis and policy support for investment in green sectors and for greening environmentally unfriendly sector. As part of this Initiative, a report entitled a Global Green New Deal (GGND) was released in 2009 which consisted of the policy actions that would stimulate economic recovery and improve the sustainability of the world economy. Along with this, poverty eradication and reduced carbon emissions and ecosystem degradation are also its main agenda.

UN Conference on the Environment and Development in Rio de Janeiro, 1992 (Earth summit) linked economy and environment with sustainable touch. This gave rise to the action plan for the 21st century (Agenda 21). The idea of green economy appeared in this conference which has received international heed owing to be one of the main theme and as a major tool to address the financial and environmental crisis. And is defined by UNEP as "one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. It is low carbon, resource efficient, and socially inclusive" (UNEP, 2011) [2] [3]

The three main areas for the current work on Green Economy are:

1) Macro-economic approach to sustainable economic growth through regional, sub-regional and national fora.

2) Access to green finance, technology and investments

3) Support to countries in terms of development and mainstreaming of macro-economic policies to support the transition to a Green Economy [3]

The transition towards green economy requires to adopt certain principles which is beyond the traditional technology based economic system.

1. The **Wellbeing Principle** which enables all people to create and enjoy prosperity by providing priority to investment and access to the sustainable natural systems, infrastructure, knowledge and education needed for all people to prosper
2. The **Justice Principle** which promotes equity within and between generations
3. The **Planetary Boundaries Principle** which safeguards, restores and invests in nature.
4. The **Efficiency and Sufficiency Principle** which support sustainable consumption and production
5. The **Good Governance Principle** The green economy is guided by integrated, accountable and resilient institutions [4]

Green economy in Indian perspective

The Indian economy has become very much vivid in the global arena. With the fastest growing emerging market economies in the world, Indian economy grasps the responsibility to meet the development needs of its billion-plus population. India is currently Asia's third largest economy by GDP. India's gross national income for 2019 was 2,120 $ with an annual growth rate of 11.5% (Economic Survey 2021-22). The share of services sector is the largest in total GDP of India at 54.77% (2020), followed by industrial sector at 27.48 %, and 17.76% being contributed by the agriculture sector. In 2021, India's total population stood at 1.39 billion and its share in the world population was around 17.7%. In order to achieve development objectives, the Indian economy should continue to grow. But certain serious constraints on natural resources such as land, water, minerals, and fossil fuels, driving up energy and commodity prices comes into its way. In spite of India's strong growth which leads to increased employment opportunities and millions to emerge from poverty, India's remarkable growth record, however, has become gloomy by a degrading environment and growing scarcity of natural resources. As per world air quality report 2020 India is the third most polluted country. Twenty-two of the world's 30 most polluted cities are in India. Delhi has been ranked as the 10th most polluted city. Simultaneously, poverty remains both a cause and consequence of resource degradation, agricultural yields are lower on degraded lands, and forests and grasslands are depleted. This further enhances the impoverishment and environmental degradation.

So in order to "grow green" and to enhance the social equity and job creation. Green growth could play an important role in balancing these priorities. But the two key challenges for national policy making is to manage fiscal deficits and public debts, which creates difficulties in the pathway of green growth changes. [5-7]

Despite embracing so many constraints India came up with innovative policies to make the green finance sectors to grow. India was the first country in the world to establish a dedicated ministry for renewable energy, in 1982. A target of 20 GW of solar capacity by 2022 set in 2010 – was passed four years ahead of schedule. India is now targeting 227 GW of renewables by 2022, more than the total installed renewable capacity of Latin America.

The Indian Government has taken several initiatives such as introduction of the concept of solar parks, organizing RE-Invest 2015—a global investors' meet, launching of a massive grid connected rooftop solar programme, earmarking of Rs.38,000 crore (Euros 4 billion) for a Green Energy Corridor, eight-fold increase in clean environment cess from Rs.50 per tonne to Rs.400 per tonne (Euro 0.62 to Euros 5 per tonne) , solar pump scheme with a target of installing 100,000 solar pumps and programme to train 50,000 people for solar installations under the Surya Mitra scheme, no inter-state transmission charges and losses to be levied for solar and wind power, compulsory procurement of 100 per cent power from waste to energy plants, and Renewable Generation Obligations on new thermal and lignite plants, etc [8]

Five high-impact sectors key to the Green Economy transition in India are Agriculture, Construction, Power, Manufacturing, Transport and Tourism

1. **Agriculture-**

Several measures have been taken by the government recently to improve and support farmers' livelihoods, especially small farmer. These include, raising Minimum support Prices (MSP), improving access to credit, development of climate resilient seeds, providing Soil Health Card (SHC) so farmers can judge the state of their soils. Organic farming was given emphasis in the

2017 Union budget. In 2015, Sikkim was named the first fully organic state in the country. This inspires many other state governments.

2. Construction

India ranks third in the top Ten Countries for LEED (Leadership for energy and environmental design). India is currently the fourth largest market in the world for green building. Fly ash utilisation in the construction sector has witnessed a steady upward trend. According to Ministry of Environment, Forests, and Climate Change, fly ash utilisation in the country was 57% in 2014 against 13% in 1999. Some innovative solutions has been provided by private companies such as Wipro saves 40% energy worth INR 10 million on a 175,000 square feet building every year. Godrej saves 63% energy worth INR 0.9 million energy worth rupees on a 20,000 square feet building every year. The Model Building Bye-Laws of 2016 mandate that all buildings on various plot sizes above 100 square metres shall comply with the green norms. Greening of rooftops and public spaces in all urban areas to prevent urban heat island effect is also an innovative idea.

3. Energy

The Ministry of New and Renewable energy targets to set up renewable energy capacities to of 175 GW by 2022 of which about 100 GW is planned for solar, 60 for wind and other for hydro, bio energy. In 2016, the world's largest solar plant was unveiled in Tamil Nadu with a capacity of 648 MW.

Some initiatives by the Government of India to boost the Indian renewable energy sector are as follows:

- A new Hydropower policy for 2018-28 has been drafted for the growth of hydro projects in the country.
- The Government of India has announced plans to implement a US$ 238 million (Euros 210 million) National Mission on advanced ultra-supercritical technologies for cleaner coal utilization.
- The Ministry of New and Renewable Energy (MNRE) has decided to provide custom and excise duty benefits to the solar rooftop sector, which in turn will lower the cost of setting up as well as generate power, thus boosting growth.
- Around 4.96 million household size biogas plants were installed in the country under the National Biogas and Manure Management Programme (NBMMP) by 2016-17.
- The Indian Railways is taking increased efforts through sustained energy efficient measures and maximum use of clean fuel to cut down emission level by 33 per cent by 2030.
- Budget 2021 has proposed the launch of Hydrogen Energy Mission in this fiscal year. Hydrogen energy technologies across the world have still not become commercially viable, but the energy source is seen as the next big thing as its usage would lead to zero emissions. With the announcement, India has joined the race for producing the next big energy source.

4. Manufacturing

Green manufacturing in India is still at the budding stage. There has been significant policy development and adoption by the manufacturing industry in the area of green energy. Its manufacturing sector generates just 16 % of India's GDP—much less than the 55 % from services. Realized at its full potential, manufacturing could generate 25 to 30 percent of GDP by 2025 and create 60 million to 90 million new jobs in the country

5. Transportation

Growing trend in India's transportation sector today is the growth of on-demand transportation and carpooling platforms. These are particularly popular in urban areas and are expected to grow exponentially as Internet penetration improves. Since 2016, UberPOOL has reported saved over 32 million km of vehicle traffic, over 1.5 million litres of fuel and reduced emissions worth 3.5 million kg. The current patterns and trends of transportation in our cities are extremely energy intensive and highly unsustainable. Upgradation in terms of fuel quality and fuel efficiency can promote cleaner fuel by reducing sulphur content and can lead to significant reduction in emissions. Electric vehicles as a green growth intervention yield multiple co-benefits, including energy security, job creation (through technology innovation and local manufacturing), and reduced local air pollution. Government of India recently announced the **Faster Adoption and Manufacture of Electric Vehicles** in India Scheme, which is a step in the right direction. However, in order to accelerate the uptake of this green technology, it is recommended that the scheme be further augmented with substantial additional funding and provisions made for granting 100% capital subsidy to state governments that are keen to adopt electric buses in public transportation. [7][9][5]

Apart from these all Ministry of Environment, Forest and Climate Change has become the coordinating Ministry on PAGE. The Partnership for Action on Green Economy (PAGE) was launched in 2013 as a response to Rio+20 to support those countries who wants to move towards greener economy. PAGE supports nations and regions in reframing economic policies and practices around sustainability to foster economic growth, create income and jobs, reduce poverty and inequality, and strengthen the ecosystem of their economies

PAGE, can make substantial contributions to India's national targets regarding Inclusive Green Economy, Nationally Determined Contributions to the Paris Agreement, Sustainable Development Goals (SDGs) initiatives, to identify sectors under resource efficiency where work on green economy could be mainstreamed.

- PAGE India would bring in transformational shift through global green economy learning forum where in UN Agencies and other international organizations form a conglomerate and offer advice on emerging policy issues
- Through the forum a series of interactive and programmatic high-level regional consultations will be organised that will help finalise PAGE work plan in India, primarily identifying sectors for intervention. [10]

Reforms required

No nation has ever attempted these twin transformations — high competitiveness and long-term sustainability — simultaneously. The traditional farm-to-factory development model has to be shifted to the farm-to-green frontier model. For this India has to adopt a different development model which will shift India's workforce from agriculture to globally leading, resource-efficient businesses. Also, these companies must use the most advanced green technologies and business models.

India having the third-largest start-up ecosystem in the world with the companies also pursuing innovation-driven growth, there is a need to consider a comprehensive policy package that will

enable us to simultaneously undertake a green transformation [11]. Global best practices and India's own experiences suggest certain focus areas for such a transformation.

1. Specific and stable policy goals need to be established to set detailed green targets for various sectors Decarbonisation approaches in the green frontier scenario will drive the growth of green industries, green jobs, green skills, green entrepreneurs and green finance

2. Revamping of its existing institutional framework for environmental governance in order to align it with the country's green transformation. As per global best practices, a comprehensive institutional framework could include four levels — super sovereign, sovereign, state/province and city. An independent council or board may also be required to monitor, report, and verify green targets.

3. The green industries such as waste management, solar panels, electric vehicles, super-efficient appliances, recyclable food packaging, clean coal, etc.in order to grow require huge investments which might be approximately $95 billion to $125 billion per year. A "green super fund" could be established to jumpstart green investments by pooling together international and domestic capital. Such a financial institution could play a dual role in mediating and mitigating risk for global capital, as well as identifying sectoral project pipelines.

4. Addressing data gaps: Collecting and synthesizing existing and new data is needed to facilitate preparation of strategies as well as evaluation of existing policy initiatives. Data for other parameters can be collected using existing management information systems

Conclusion

In the 21st century with a burgeoning global population and pollution green economy shows a righteous boulevard for the future generation ensuring sustainability and harmony between man and nature. If we are able to bring the carbon content to pre industrialisation level reducing global warming we can ensure that our forthcoming generations would live to see flowers ,butterflies ,elephants & pigeons else we know that mightiest Dinosaurs too didn't survive long.

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