

Can Green Economy in India Eradicate the Major Issue of Food, Fuel and Finance Crisis

Sumanta Bhattacharya^{1*}, Bhavneet Kaur Sachdev²

¹Research Scholar and Policy Analyst, Department of Development Studies, Maulana Abul Kalam Azad University of Technology, Howrah, India

²Student, Department of Development Studies, Calcutta University, Howrah, India

Abstract: Green economy is considered a weapon or a magic tool which can resolve the triple crisis of food, fuel and finance. India has great potential and scope for green economy because of its geo climatic conditions and home to untapped resources. India is the largest producer of solar energy in the world, as the country receives more than 300 sunny days. Sikkim the first state in the world to be declared organic state which is from India. It is noted that in the recent years small states are doing well in the field of green economy by promoting organic farming and reducing the use of plastic bags in particular the North-East states of India, there are the role of models for the country. We have seen a rapid growth in the use of renewable energy, where South and West India produces the most. Digital India is also playing a significant role in the promoting of digital green economy. All countries are moving towards green economy to receive their sustainable development goals and tackle the issue of climate change and environment degradation. The main motive of green economy is to reduce carbon emission, resource efficient and social inclusiveness making life environmental friendly.

Keywords: Green economy, Sustainable Development, Sikkim, carbon emission, Digital India, organic farming, digital green economy.

1. Introduction

Green economy aims to reduce carbon footprints, environmental risk and make the economy eco-friendly moving towards a sustainable development. Green economy provides a macro-economic approach to sustainable economic growth by regional, sub-regional and national fora, Green Economy focus on green finance, technology and investment, assisting countries in terms of development and bringing into the limelight macro-economic policies to support transition to a green economy. Green economy focuses on reduction of carbon emissions and pollution, minimize loss of biodiversity, increase efficiency and promote ecosystem services. It focus more on economy, investment, infrastructure, capital, employment and skill development. The green investment has to be supported by new policies, change in regulations and public expenditure. Countries across the world is moving towards green economy for instance Urban LEDS: it an urban low emissions development strategy, which defines a pathway

to transition for a city or town to a low emission, green and inclusive urban economy through its integration into existing city developed plans and processes. Moving towards a well-planned and more compact city that promotes mixed use of land residential and commercial use, maximizing resources efficiencies of services and sectors for enhanced ecological, economic and social gains. Green economy involves from collecting, transporting and treating waste for proper disposal prioritizing reuse, recycling, composting or energy generation encouraging green jobs, conscious production and consumptions. The green climate cities or GDC is a process methodology for resilient low-emission cities this is being implemented in EU with the aim to move towards green economy. India is focusing on building a green Finance ecosystem, India has favorable conditions which can opportunities for green economy, it includes more than 300 clear sunny days which can help in the generation of solar energy, 12 perennial rivers and surrounded by a coastline of more than 7500 km, this potential and scope of India are able to provide a green ecosystem and if we look at the other side India is the 4th largest emitter of carbon in the world, the carbon is mainly emitted from the industrial, power sector, infrastructure sector, taking into consideration the potential, scope and carbon emitter of the country, we have a massive scope for renewable energy space in India, this should be utilized properly to bring about a potential and scope for ecosystem in India. Renewable energy space can help in powering solar parks and also provide rooftop solar. So let's first understand what is the need for green finance ecosystem in the country, according to the world bank report 70% of the global greenhouses gases are from infrastructure development, construction sector, power sector and transportation sector. According to WHO projections, the no of deaths caused due to these greenhouses gases stood at 1.5 lakh per annum and if the current situation increments the death rate can increase to 2.5 Lakh per annum, this is why it becomes important to modernize the society.

*Corresponding author: sumanta.21394@gmail.com

2. Research Methodology

For the purpose of this exploration, I have used an amalgamation of two of the archetypical social sciences research tools application –as they are authentic and brilliant method to assemble statistics from multiple appellants in a methodical and convenient way. Questions were asked to the parents and their children, survey, interviews –consisting of several interrogations which were dispersed among representative of each contender group.

1) Objective of the Research Paper

The main areas of exploration in this paper incorporate:

1. What is green economy
2. How are countries across the world moving towards green economy
3. Scope of green economy in India.
4. How successful has been India in achieving green economy.

3. Literature Review

It is necessary to build quality infrastructure and efficiency transportation system and this should be done with minimum damage to the environment. There are a number of green projects initiated started in many countries. Green projects can be defined as those projects which do not cause any kind of harm to the environment. Green projects are not just confined to solar and wind energy but also include sustainable land use, clean energy, efficient transport, green housing, pollution control projects, we have wide scope for green projects. Green bonds which we require for green projects, green bonds are financial institutions that fund environmental-friendly projects and business. Bonds are debt instruments which will bear interest. These are specialized funds and focus on climate change, it was first issued by the World Bank and European Bank. A lot of initiatives have been shared in Europe and other parts of the world where countries have adopted themselves to Green economy like Europe has adopted Nature based solutions to tackle the issue of environmental risk, with the construction of city lagoons to save water, installation of green roofs to limit heat stress, control water waste management in the urban area. The Urban living lab project, Sweden economic share between countries to enhance green economy. Canada many cities have moved towards 100% electric cars to eliminate carbon emission. Gothenburg in Sweden was the first country to introduce green bonds and work to decrease resident consumption based carbon emission. It has been recognized for its innovative climate strategies.

Promotion of electric vehicles in Paris, cities like Stockholm and London have adopted congestion charges to limit car driving in the centers of city, there is limit of driving and an increase in air quality. Cities like Basel actually require green roofs on all new buildings, Barcelona they are trying to increase solar panels by regulating them on new buildings, cities more and more work with partnership Rotterdam Climate Initiative Lund and Copenhagen have excellent cycling infrastructure, with good accessible city lanes, good air pumps, good safe places to park your bike or to for your bike. Constructive of

passive houses where nature is used as a means instead of air conditioners and heaters and electricity is generated from sunlight. Today countries are shifting towards renewable energy, use of electric transportation, promoting eco-friendly transportation like bicycle and creating infrastructure for it, In fact in India many states have created infrastructure for bikes and walking spaces especially in Pune and Delhi. India has a massive untapped resource which can help in the moving towards a green economy supported by its geographical location and climate conditions, making India sustainable and moving towards Atmanirbhar Bharat.

4. Findings

Green economy and sustainable development are co-related. In 2008 when the world was having food fuel and finance crisis converge, green economy ideas enter the mainstream UNEP Green Economy Initiative launched, in 2012, RIO+20 UN Conference on Sustainable Development. Sustainable Development involves environment, economic, social. Key theme for RIO+20 UN conference on sustainable development was Green economy in the context of sustainable development and poverty eradication working on the ecological and economic dimensions. Green economy meant low carbon growth +resource efficiency +social inclusivity. The Ecological crisis is a fundamental challenge if solved can provide green economy. A proposal for addressing the triple crisis and a strategy to create a social base. India is the fourth largest consumer for fossil fuel in the world. India has the second largest population in the world and home to one-third of the poor population. Air pollution, environmental degradation is very high in India. India is experiencing the worst water crisis in the world, more than half of the population don't have access to safe drinking water. India has a serious issue of air pollution out of 30 most polluted cities in the world 21 are from India in 2019, 51% of the air pollution is produced by Industries, 27% by vehicles and 17% by crop burning. India deforestation rate is very high, land is being taken away by big industries for construction purpose resulting in loss of biodiversity and taking the home of tribes. When it comes to the use of plastic, Delhi, Mumbai, Chennai, Bengaluru, Hyderabad and Ahmedabad are among the top cities where as Daman, Kavaratti, Gantgok, Panjim are the least users of plastic, 60% get recycled while 9400 tonnes of plastic gets end up in the oceans, seas or get piled on the land. Therefore there is a need in India to move towards green economy.

India has been successful in adopting to renewable source of energy, Today Diu the city which runs 100% on renewable energy. India is a renewable energy hub with installation of more solar and wind energy. India among one of the top countries to produce huge amount of energy from renewable. India's 38% of installed electricity generation is from renewable energy as per November 2020 report. Government is also aiming to install rooftop solar projects by 2022. Villages where electricity couldn't reach due to poor road connectivity, have now access to electricity through the use of solar panels and wind turbines. India's solar and wind market is estimated to grow from 9.5% in 2020 to 28.9% in 2030. India's wind

energy potential is limited to 6 states only which includes Tamil Nadu , Rajasthan , Gujarat , Maharashtra, Andhra Pradesh and Karnataka , even biomass and geothermal has the same status , only solar energy is equally distributed .

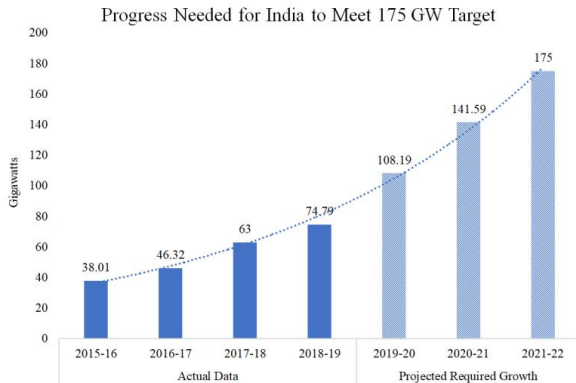


Fig. 1. Progress needed for India

Karnataka and Andhra Pradesh produces the largest solar power energy. The nations aims to reduce it depends on fossil fuel with an target of 450 GW renewable energy by 2030 .It stands in the 4th position when in the production of solar power in the world , the largest solar power producing states are located in the West and South. Karnataka produces 7100MW, Telangana 5000MW, Rajasthan 4400MW – the Bhadla Solar Park in Jodhpur is the largest fully operated solar park in the world with a capacity of 2245MW of installed solar energy, Andhra Pradesh 3470MW, Gujarat 2654MW .

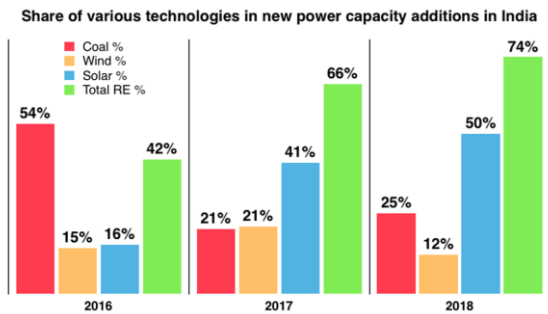


Fig. 2. Share of various technologies

Sikkim has showing us the way forward towards Green economy , has becomes India’s first organic state and a plastic free state with the implementation of many policies like Ban on Plastic carry bags since 1997 , Grazing regulation 1998 , completed ban on Forest areas , Ban on the sale of pan masala and Gutka since 2002 , Sikkim Green Mission 2006 , 1 for 10 Tree Felling 2006 , Ban of Firecrackers since 2014 , Ban on Styrofoam 2016 , Heritage tree 2016 , Mith Trees-Tree adoption 2017 , Ban on use of packaged drinking water bottles since 2016. Ban on Diclofenac, these are some of the steps taken by Sikkim to make Organic state .Sikkim is also the first state to ban open defecation , urinating in public cost a fine of rupee 500 and its mandatory to have a sanitary toilets at home , if you don’t have then you won’t receive any benefits from the

government , mass awareness programme, Sikkim residents support the policies of the state and the Municipal staff does multiple rounds of garbage collection and monitoring .In Sikkim 30 to 40% of the waste is recycled compared to the national level , many states in the North East such as Meghalaya Arunachal Pradesh and Assam have been working towards prohibiting single use plastics and encouraging organic farming . Meghalaya has a dedicated water policy for the state .Sikkim also has dedicated organic certificate agencies, the small states are continues working towards green economy.



Fig. 3. Organic cultivation in north- eastern region

Coming to agricultural, it contributes a good some of greenhouse gases and has a significant impact on the climate change, Various Aristech companies have come together to help farmers, companies are working to remodel the supply chain through efficient distribution systems , other firms have used technology like satellites and drones to geo tag farms , estimate outputs and crop health .Companies are also sitting up online trading platform to directly connect with farmer and consumers .Digital Platforms like Patna-based DeHaat, Indian firms are also focusing on freshwater aquaculture, Chennai based agritech is using artificial intelligences and machine learning to help farmers and advise them on disease management. Aquaconnect has helped farmers to cut down on GHG emissions .Farmers also lack access to crop insurance and credit , so start-ups like Mantle Labs and SatSure provides details on soil health and weather patterns which determine the risk associated to a farm. Digital green economy can help in creating new pathways for farmers and escalate their economy.

1) *Way Forward*

India has the youngest workforce in the world , average age of Indian in 2020 is 29 years , 65% of the population is below the age of 34 , India has the second largest population in the world , which will create immense opportunity of consumptions demand for cards , data consumers .India is considered a key market for growth , rising in incomes business have growth and spending level have increased , willing to pay high prices , people like premium product , there is smooth flow of money , people are more into brands and quality .Green economy is emerging as the new weapon to counter environmental challenges and it is the future . Today India is the largest producer of solar energy, technology is being used in

agriculture giving pathway to digital green economy, small states have recorded to cutting down carbon emission and total brand on the use of plastics .India is working towards making India Atma Nirbhar. With increase in green economy which will help to reduce the problem of poverty, hunger, unemployment and also make India powerful and develop sustainably.

5. Conclusion

India because of its geo climatic conditions and geographical location has great scope and potential for green economy, with having more than 300 sunny days in a year, it has produce the largest solar energy in the world and it is , many states in India are using renewable energy and 38% of India 's renewable energy is used to generate electric . India has also started producing electric cars and planning to run cars on hydrogen gas .India air pollution has been cut down in many parts with reduction in the use of fossil fuels especially in the South and West regions . Solar energy is regarded as one of the weapon to make Atma Nirbhar Bharat. Many cities have started in the use of e-vehicles and ecofriendly transport to cut down on emissions, however this green economy also has changes when

it comes to rural India where lands are being take away for renewable energy like solar panels, wind tribunals make the life of rural people hard.

References

- [1] Kean NG. Paving the way for digital green economy in Indian Agriculture .
- [2] TERI, Green Growth and sustainable development in India.
- [3] Ingrid Heindorf , Sikkim's state policy on organic farming and Sikkim Organic Mission India .
- [4] Shruti Issar , 2018 , Towards a green Inclusive India .
- [5] TERI- Initiative on Green Growth and Development of India.
- [6] Santosh Jha , 2020, October , India and the EU are natural partners for the green economy .
- [7] Prakash Shankar Kamble , Ovhal Vishal V , 2016 , August , Analysis of Green economy of India , North Asian International Research journal Consortium .
- [8] Patrik Soderhom , 2020 , The green economy Transition : the challenges of technological change for sustainability. Sustainable Earth, BMC.
- [9] Lucretia Dogaru , 2020 , Green Economy and Green Growth – opportunities for Sustainable Development , Proceedings , 14th International Conference on Interdisciplinary in Engineering -INTER-ENG-2020 .
- [10] Vandana Tyagi , 2017 , May, Green Economy in India : Possibilities and Challenges , International Journal of Research in Social Sciences , vol. 7, no. 5, 2017.