

Green Finance: A Key Initiative for Sustainable Rural Development in India

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Abstract: Ever since the Industrial Revolution in the 18th century, the world has observed, of late, that the cost of all industrialization has slowly and gradually resulted in climate change which is posing a great threat in the form of continuous rise in the Earth's temperature. To mitigate the threats of climate change, it is necessary to shift economic development to the path of low carbon emissions. To oblige the commitment made by India in the Paris Agreement and to accomplish the Sustainable Development Goals (SDGs), an investment to an extent of two and a half trillion dollars will be required by India between 2015 to 2030, according to an estimate. India being an agrarian economy, the vast rural population is being adversely affected by the climate variations because the agriculture and allied sectors are climate sensitive. Therefore, it is necessary to induce the rural economy with resources, majorly financial, that results in climate change resilience and sustainable development. Green Finance refers to the financial investment in projects that promote nature friendly infrastructure and adopt climate change action plan commitments. The present study aims at knowing the green financing strategy in rural sectors, its application areas and the initiatives taken by the government in this field. The study is descriptive and based on secondary data collected from various reports of government and other agencies, research journals and research articles on websites.

1 INTRODUCTION

Ever since the Industrial Revolution in the 18th century, the world has observed, of late, that the cost of all industrialization has slowly and gradually resulted in climate change which is posing a great threat in the form of continuous rise in the Earth's temperature. During the industrial revolution, exhaustible resources were used exorbitantly leading to high carbon emissions in the environment. The increased industrialization used more machines, persuading more consumption of electricity generated by fossil fuel consumption leading to more carbon emissions. The industrial revolution has helped the global economy to solve the economic problems of food, clothing, shelter and other necessary amenities. But the increased use of mechanized transportation, high standards of living based on increased use of electricity for gadgets etc. - all have impacted the environment negatively. India being on the path of economic development has been facing the environmental degradation threat even more because not only India needs to increase its pace

of development keeping in consideration the needs of its vast population but also, has to prevent its natural resources from excessive depletion. Further, the development in the urban areas due to industrialization leading to environmental pollution has been showing negative impacts on the lives of common people. At the same time, the rural areas are being underdeveloped due to multiple reasons- the one being, lack of modernized agriculture characterized by monsoon dependency. Since, the majority of population in India resides in rural areas and dependent on agriculture, the devastating impacts of climate change are worse and more threatening for the rural population. To mitigate the climate change adversities, it is necessary to shift economic development to the path of low carbon emissions. According to the UN Sustainable Development Goals Agenda, an action plan was decided by the world leaders to combat climate change and its impact. The government of India has designed a National Action Plan on Climate Change (NAPCC) to fulfill its commitment towards SDG agenda 2030 that will help to attain economic and environmental goals in a

sustainable manner. India being an agrarian economy, the vast rural population has been adversely affected by the climatic variations because the agriculture and allied sectors are climate sensitive. Therefore, it is necessary to induce the rural economy with resources, majorly financial, that results in climate change resilience and sustainable development. The financial investment in projects that promote environment friendly infrastructure and adopt climate change commitments are termed as Green Finance and includes innovative financial devices and policies, such as pro-environment banking, environment friendly fiscal policies, green fin techs, green fixed income securities, green loans and aids, carbon pricing instruments, etc. (Sachs, et al., 2019, p.3). Green finance can contribute significantly towards the environment, society and mitigating climate change (Ozili, 2022).

Green Finance is an innovative pathway to invest in green activities that protect the environment. It includes funds needed to develop alternative technologies that do not cause much harm to the environment as against existing technology. Financial instruments that help in investing in green infrastructure or green projects are termed as green instruments. Green finance combines economic profits with environmental sustainability.

2 REVIEW OF LITERATURE

The concept of Green Finance is in early stage of development and many more thoughts are being added as it is evolving. The United Nations Conference on Sustainable Development happened during 20 to 22 June, 2012 in Brazil, quoted the term 'Green Economy' for sustainable development and elimination of poverty. Green Economy means growth oriented by investments in infrastructures and energy sectors that generate desired efficiency with less carbon effusions ensuring protection of natural bio diversity and ecosystems (UNEP, n.d.). Green economy encourages activities for promoting nature friendly development and prevents environmental deterioration. Green Finance depicts investment in specific infrastructural areas that promote development with less carbon footprints, methods, techniques and technology which are environment friendly. There are terms that analogue to green finance and has been described by UNEP as: Sustainable finance which entails social, economic, natural or environmental and issues relating to governance. Climate Finance is a part of Green

Finance but the latter is a wider term relatable to investing in projects leading to sustainable development (ISO, n.d., p.3). Green Finance, as defined by the International Development Finance Club, refers to the direct inflow of funds in environment-conscious development projects and policies for promoting sustainable economy with the purpose of achieving pollution free low cost energy and other objectives like conservation of water bodies and coastal areas, sustainable agriculture, reducing climate change disasters, systematic waste disposal etc. (UNEP Inquiry, 2016).

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2.1 Objectives of the Study

The present study aims at knowing the green financing strategy in rural sectors, its application areas and the initiatives taken by the government in this field.

2.2 Research Methodology

The study is descriptive and based on secondary data collected from various reports of government and other agencies, research journals and research articles on websites.

3 DISCUSSION

3.1 Green Finance and India

India is predominantly an agro-based economy where the majority population resides in rural areas and engaged in agricultural activities. According to Global Climate Risk Indicator 2020, climate change cost India around 37 billion dollars and agriculture is the worst hit sector due to climate change (GIZ, 2021). For achieving sustainable rural development and mitigating climate change impacts, the government of India is focusing on the concept of green growth. The union Budget 2023-24 announced various schemes representing India's climate action

response that target towards achieving following five nectar elements (panchamrit):

- Achieving non-fossil electricity capacity building of 500 Gigawatt by 2030
- Meeting 50% of energy requirements through renewable energy sources by 2030
- Reduction in overall estimated carbon emissions by one billion tones (from 2021) till 2030
- Reducing carbon footprints in economy by 45% over 2005 levels by 2030
- Carbon Neutrality in economy by 2070

The above targets will require green finance for which National Clean Energy Fund and National Adaptation Fund are established along with Climate Change Finance Unit as central coordinating agency (Centre for Budget and Governance Accountability, 2017, p.11).

3.2 Initiatives Taken by the Government of India in Green Finance Sector

As a part of her commitment to reduce carbon emissions, India put forward a 5-elemental approach (named as 'Panchamrit') as climate action aggressive plan. This was presented in Glasgow at COP 26 (Conference of Parties) at the United Nations Framework Convention on Climate Change (UNFCCC). India's commitment to the 2015 NDC (Nationally Determined Contribution) to UNFCCC contains three quantitative milestones to be achieved by 2030 relating to non-fossil based electricity capacity building, reducing carbon emissions intensity of economy and creation of additional carbon sequestration of around 3 billion tons of CO₂ equivalent by raising additional forest cover (PIB, 2022). Accordingly the focus of fiscal Budget 2023-2024 has been on programmes and policies relating to green fuel, green energy, organic/green farming, green transport, green buildings, and green equipment (Government of India, Budget 2023-2024, 2023).

The major initiatives declared by the Government of India in relation to green growth and green finance are:

- **Green Initiatives relating to Clean Energy infrastructure development in rural areas**
- **Scheme for ensuring renewable energy to farmers and rural community called as "Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahaabhiyan"**

This scheme, popularly known as PM-KUSUM, was started in 2019 with the aim of ensuring energy

security to Indian farmers and it provides for installing 10,000 MW of "Decentralized Grid Connected Renewable Energy Power Plants" on barren land; installing 17.50 Lakh stand-alone solar pumps for agricultural purposes; and for converting 10 Lakh agriculture pumps, which are grid connected, into solar ones (Government of India Ministry of New and Renewable Energy, n.d.). The farmers can sell the surplus power to the grid and earn income. They will also get a subsidy on the cost of solar pumps.

- **Green Initiatives relating to waste management and green energy**
- **Setting up of "waste to wealth" plants under GOBARdhan Scheme**

In 2018, "Galvanizing Organic Bio-Agro Resources dhan" scheme has been launched for effectively managing cow dung and other biodegradable waste in rural areas. It is an important part of the bio-fuel strategy of India wherein bio-waste including cattle waste, kitchen leftovers, crop residue and market waste is converted into biogas. In Union Budget 2023-24, government announced the installation of 500 new 'waste to wealth' plants under GOBARdhan scheme that provides for putting up 200 compressed biogas plants, 75 in urban areas, and rest in rural, and also 300 community-based plants having total investment of Rs 10,000 crores (IIFL Securities, 2023). The whole purpose is to facilitate farmers and rural households with economic and resource benefits. This helps in creating livelihood opportunities in rural areas by enhancing the income of farmers and the rural community. It will give encouragement to rural entrepreneurship by involving young local entrepreneurs in the setting up and operation and management of biogas plants.

- **Green Initiatives relating to make Agriculture sustainable and more productive**
- **Scheme for promoting biofertilizers and organic farming methods for restoring soil fertility and protecting it from chemical overuse**

This scheme (named as PM PRANAM) purports to persuade green growth by discouraging use of chemical fertilizers and encouraging the use of bio-fertilizers and organic fertilizers (Ministry of Finance, 2023, February 01). The states using alternative fertilizers and reducing the use of chemical fertilizers shall be incentivized in the form of grant equivalent to half of the savings in subsidy on chemical fertilizers. It does not carry any separate budget.

3.3 Green Credit Programme

A Green Credit Programme was announced under Union Budget 2023-24 with the aim of providing incentives to voluntary environmental activities undertaken at individual, company or corporation or local association level and makes them more resourceful for such activities (Tripathi, 2023). This program will be implemented under the provisions of the Environment Protection Act. As against carbon credits that primarily focus on CO₂ emissions depletion, the Green Credit mechanism is market based where these can be tradable. It encourages farmers to adopt practices that minimize chemical fertilizers and pesticides, promote soil health, and enhance biodiversity.

3.4 Encouragement to Climate Resilient Crops like Millet

Millets are categorized as climate resilient crop since it can grow in dry areas of sub-tropical, tropical and temperate regions. Millets is a collection of small-seeded grasses, grown to be known since Indus Valley civilization as crops for human consumption and as fodder. Millets are considered as nutritious cereal and hence included in 'Poshan Mission Abhiyan' by the Ministry of Women and Child Development, Government of India. After India observed 2018 as the National Year of Millets, the United Nation Organisation was requested to observe 2023 as the International Year of Millets. In 2019, out of total production of millets in Asia of 215 lakh tons, India produced 173 lakh tons; having average yield of 1239 kg/ha as against global average yield 1229 kg/ha (Ministry of Agriculture and Farmers Welfare, 2022, p. 3)

- **Green Initiatives relating to Coastal Protection**
- **Scheme for rejuvenating coastal ecosystems** and biodiversity through mangroves called as "Mangrove Initiative for Shoreline Habitats & Tangible Incomes." It is called MISHTI. This scheme is to create a mangrove ecosystem on around 540 square kilometers area across the 11 states and 2 Union Territories during a 5 year period starting from Financial Year 2023-24. Mangroves are distinctive ecosystems having enormous bio-diversity and the scheme estimates to reduce carbon footprints to an equivalent carbon sink of 4.5 million tons (Ministry of Environment, Forest and Climate Change, 2023).

3.5 Amrit Dharohar:

Underlining the importance of wetlands in maintaining aquatic biodiversity, enhancing carbon pool in wetlands, promoting ecotourism and generating earning opportunities for local communities, the government has announced this scheme in Union Budget 2023-24. The duration of scheme implementation is three years to achieve sustainable ecosystem creation in wetlands (Jha, 2023).

4 SUGGESTIONS

The study recommends following points:

4.1 Green Growth Policy

A policy framework should be developed to decide the scope, nature and sources of green finance. The policy framework should be functional on national, state and in alignment with the UNEP framework for better cooperation and collaboration. Since climate change is a global issue, so are its impacts and therefore, solutions and/or efforts should also be collaborative to be effective.

4.2 Diversification of Green Financial Sources

As India is marching towards developing the rural areas, the correct approach should be to equip villages and sub-urban areas with sufficient renewable resources to combat climate change impacts. The rural electrification, crop management, livelihood sources, waste management, provision of basic amenities for healthy living should all be done in a way that it will not intervene in the process of revamping nature's treasure of five elements. For achieving all this, the amount of funds needed come under the scope of green finance. There is a need for diversifying the green financial sources like green bonds, green insurance, green mutual funds, green cooperative funds, green loans etc.

4.3 Capacity Building of Green Financial Institutions

As a huge amount of funds are needed for sustainable and green growth of rural areas since green infrastructure costs more than traditional one due to expensive green technologies and operations,

capacity building of rural banks and other financial institutions for green finance is essential.

4.4 Greening the Private Financial Sources

Though public finance plays a lead role in financing the green infrastructure projects, it is not sufficient. Therefore, mobilizing private finance through public-private partnerships in green initiatives is desirable. Both at institutional and individual investment level, green investors should be incentivized appropriately. For rural areas, green cooperative credit programs should be initiated.

4.5 Social Entrepreneurship Model for Green Innovation

Rural population in India has been struggling with many problems relating mainly to insufficient infrastructure for agri-business, education and health. Social problem solving through entrepreneurship should be encouraged that would provide for better job opportunities for rural youth. Green venture funds should be made available on priority. Innovations based on green technologies and production methods should be encouraged.

4.6 Corporate Social Responsibility (CSR) Contributions by Companies in India Can Be Linked to Green Investments

Mandatory contributions towards CSR activities as per the Company Law of India for companies can be linked to investments in activities contributing towards green growth in rural sectors. This should be linked to Green Credits also.

5 CONCLUSION

Majority of India's population resides in rural areas where the main source of livelihood is agriculture. According to Global Climate Risk Indicator 2020, climate change cost India around 37 billion dollars and agriculture is the worst hit sector due to climate change. While marching towards development of rural areas, it has to be reckoned that there should be sustainable development accommodating all elements mitigating climate change impacts. For sustainable rural development, green finance and its innovative instruments like green reserves, green

fixed income securities, green insurance should be inducted into financial market and concerned institutions should be capitalized. However, the concept of green finance is in its evolutionary stage and has not gained perfect clarity but it involves directing financial flows into eco friendly technologies, natural resource based green economies, clean and green energy, organic farming etc. For achieving green and sustainable development in rural areas, the government of India has initiated several projects that fall in line with Sustainable Development Goals 2030. India's Green Credit Programme acknowledges every effort done complementing the environment; both at individual and institutional level, wherein voluntary actions towards the environment shall be incentivized in the form of green credits. There is ample scope of achieving sustainable rural development in areas of farming methods, clean energy sources, green technologies etc. This can be achieved by infusing green finance in the rural economy.

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