



Green Entrepreneurship and India's Sustainable

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Abstract:

Environmental problems caused by increasing industrialization in India are having an impact on economic, social, and natural resources. In such a situation, green entrepreneurship is an effective direction to achieve sustainable development. Innovations by entrepreneurs in the areas of eco-friendly technology, renewable energy, waste management, organic farming and circular economy play a key role in India's ecological balance as well as economic growth. The government's various green policies are giving impetus to this sector and are recording many positive outcomes such as employment generation, rural development, and carbon emission reduction. This essay studies the concept, need, current status, challenges, and future opportunities of green entrepreneurship. Green entrepreneurship will be essential for India to achieve its sustainable development goals.

Introduction:

Rapid industrialization, urbanization, and population growth in India are leading to increasing environmental crises such as air and water pollution, carbon emissions, climate change, biodiversity loss, etc. For sustainable development, it is necessary to maintain environmental balance along with economic progress. In this context, green entrepreneurship is an effective tool.

E.g.: Solar energy startups, eco-friendly packaging, waste recycling industry, organic farming, electric vehicles, rainwater harvesting techniques, etc.

The need for green entrepreneurship in India:

1. Reducing the growing threat of climate change
2. The need for energy security and reducing dependence on imported fossil fuels
3. Employment Generation – Green industries can create millions of jobs
4. Rural Development – Green technologies increase productivity and income in rural areas

The concept of green entrepreneurship:

Green entrepreneurship is a business based on environmentally friendly products and services, using resource-efficient technologies that reduce pollution or enhance biological balance. An industry that makes a profit in a way that has minimal impact on the production environment.

5. Achievement of national and international sustainable development goals

Current situation in India:

India has become one of the world's leading countries in solar energy production. The EV (Electric Vehicle) industry is growing rapidly. There are large-scale waste management, plastic-free campaigns, organic farming projects underway. Many startups are based on green technologies e.g. ReNew Power, Ather Energy, Zomato Waste Management Initiatives. There is a policy shift towards a circular economy.

Government Policies and Initiatives:

The Government of India has implemented several important policies and initiatives to promote green entrepreneurship, environmental protection, and renewable energy. These initiatives serve as a guide to achieving economic growth and ecological balance.

- **National Solar Mission (NSM):** This initiative, launched in 2010, is instrumental in increasing the use of solar energy in India. Subsidies and incentives are provided for the installation of solar panels in industries, startups, and rural areas. A major role in promoting green energy-based enterprises.
- **FAME India Scheme (Faster Adoption and Manufacturing of Electric Vehicles):** A scheme implemented to make electric vehicles (EVs) affordable and accessible to the common man. Subsidies for e-scooters, e-cars, e-buses. This has boosted the EV

manufacturing industry and given impetus to green entrepreneurship.

- **Make in India and Startup India:** Capital and strategic support for environmentally friendly products, technologies and eco-friendly startups. Tax breaks for green startups, ease of registration, fast patent process.
- **Swachh Bharat Mission:** Promotion of waste management, plastic-free initiatives, recycling and waste-based industries. Creation of opportunities for waste segregation, biogas production and recycling industries.
- **National Biofuel Policy:** Promotion of ethanol blending program, biodiesel and compressed biogas (CBG) production. Encouragement of entrepreneurs generating energy from agricultural residues, waste and biological materials.
- **Circular Economy Policies:** Importance of plastic waste-to-value, e-waste management, recycling-based industries. Support for upcycling and recycling startups.
- **National Green Hydrogen Mission:** A lot of encouragement for the production of green hydrogen as a clean fuel. A major initiative to reduce carbon emissions in the transport, industry and energy sectors.
- **Prime Minister's Kusun Scheme (PM-KUSUM):** Solar pumps, solar power plants, and solar irrigation systems for farmers. Enhancing rural entrepreneurship through green technology.
- **Zero-Carbon Target (Net Zero 2070 Commitment):** The goal is to reduce carbon emissions to zero by 2070. Against this backdrop, there is

widespread government support for green technology, renewable energy, the EV industry, and recycling businesses.

- **E-waste Management Rules and Plastic Ban Rules:** Strict rules for recycling electronic waste. Ban on single-use plastics has boosted the eco-friendly manufacturing industry.
6. Challenges in green entrepreneurship

Lack of Financial Support:

A major challenge facing the growth of green entrepreneurship is the lack of finance. Green industries such as eco-friendly technologies, renewable energy projects, waste recycling industries, organic farming, and circular economy initiatives require large capital investments. But traditional banks and financial institutions hesitate to provide adequate funding for such projects for several reasons.

1. **The Initial Investment is High:** Renewable energy, EV production, recycling systems or green technology installations require large initial capital. Small entrepreneurs and startups do not have the financial means to make such investments.
2. **Perceived High Risk:** Since green technology is relatively new, traditional lenders consider it to be more risky. Market uncertainty, technological changes, and longer payback periods make banks less eager to approve loans.
3. **Lack of Financial Literacy:** Many entrepreneurs in rural areas are unable to take advantage of available opportunities because they are unaware of the loan process, government schemes, and subsidies.

4. **Venture Capital and Private Investment are Low:** Investors in India prefer to invest in traditional IT or service-based startups. Venture capital funds invest less in green businesses due to slow return on investment (ROI).

5. **Lack of Technical Assessment:** Banks and financial institutions lack the expertise to conduct environmental and technical assessments of green projects, resulting in many projects remaining on paper. Delays in receiving grants and subsidies and although subsidies are available from the government for many green schemes, complexity in the process, delays in approvals, and cumbersome documentation processes make it difficult for industries to receive timely financial assistance.

Opportunities and Future Prospects:

Green entrepreneurship is becoming a significant avenue for India's sustainable development. There is a huge market available in the areas of eco-friendly technology, renewable energy, waste management and circular economy, and this sector is expected to grow tremendously in the coming decade. Below are the key opportunities and future directions in this sector.

1. **Growing Demand for Renewable Energy:** India is the fastest growing market for solar and wind energy globally. Solar panel manufacturing, solar rooftop projects, and rural solar irrigation systems are all creating huge business opportunities for entrepreneurs.
2. **The Tremendous Growth of the Electric Vehicle (EV) Industry:** The EV industry is growing rapidly due to the government's FAME scheme.

Thousands of startups can emerge in this sector, from EV charging stations to battery technology to EV repair and service centers.

- 3. Waste Management and Circular Economy:** India generates crores of tonnes of waste every year. There are vast opportunities for setting up industries in the areas of recycling, upcycling, waste-to-energy, e-waste management, etc. of this waste.

- 4. Agricultural and Rural Green Entrepreneurship:** Green technology has great potential to increase employment generation in rural areas. Organic farming, biogas units, cow dung-gas and biofertilizer industries, solar irrigation projects, all of these can accelerate the economic progress of rural areas.

- 5. Green Buildings and Energy-Efficient Technologies:** As urbanization increases, the demand for energy-saving green buildings, smart homes, and energy-efficient appliances is increasing. Many new opportunities are available in this field such as consulting, construction, and equipment manufacturing.

- 6. Green Hydrogen and Clean Fuel Industry:** India's Green Hydrogen Mission is expected to bring a major revolution in the field of clean fuels. Research and industry in the fields of hydrogen production, storage technology, and transportation systems are set to increase.

- 7. Growth in the Carbon Credit Market:** Environmentally friendly projects can generate carbon credits, which are tradable on the international market.

This can be a source of additional income for many green enterprises.

- 8. Indian Green Products in The Global Market:** The demand for green products and services is growing rapidly worldwide, so there is great potential for exporting eco-friendly packaging, organic products, and renewable energy equipment.

- 9. Opportunity for Technological Innovation:** Modern techniques like AI, IoT, machine learning are being used in green technology. This has increased the opportunity to build innovative startups in smart energy management, weather forecasting, pollution control, etc.

Conclusion:

Green entrepreneurship plays a crucial role in India's journey to sustainable development. Eco-friendly industries and technologies have become essential to address the challenges of increasing pollution, climate change, resource scarcity, and urbanization. Green entrepreneurship helps in economic development as well as environmental protection, rural development, job creation, and strengthening the circular economy. The government's various schemes promoting renewable energy, clean transportation, waste management, and green technology are providing huge opportunities in this sector. However, some challenges still remain, including lack of financing, lack of technical knowledge, and market uncertainty. Overcoming these challenges requires public-private partnerships, innovation, research, green financial instruments, and policies that empower entrepreneurs. Overall, green entrepreneurship is essential to meet India's 2070 net-zero target and

achieve the Sustainable Development Goals. With the right direction, government support, social awareness and technology-driven innovation, India can become a leading nation in the world's green economy.

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