

SUSTAINABLE DEVELOPMENT GOAL 9: BUILDING RESILIENT INFRASTRUCTURE, SUSTAINABLE INDUSTRIALIZATION AND FOSTERING INNOVATION

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ABSTRACT:

India is aspiring to become a global power which will critically depend upon its ability to double the manufacturing industry's share of GDP by 2030 and invest in scientific research and innovation. With over half the world's population now living in cities, mass transportation and renewable energy are becoming more important along with the growth of new industries and information and communication technology. Promoting sustainable industries and investing in scientific research and innovation are very crucial ways to facilitate sustainable development. Investments in Infrastructure like in transportation, irrigation, energy and information and communication technology are very important for achieving sustainable development and it has been recognized that improvements in health and education requires investment in infrastructure. Therefore technological progress is the foundation to achieve environmental objectives and it is synonyms to say that industrialization will require technology and innovation and similarly, development requires industrialization. The paper will describe the targets set under SDG9, the global as well as domestic initiatives taken in order to achieve the commitments, it will critically analyze the impediments to successful implementation of the goal and lastly, it will assess India's position and the way forward.

Keywords: Industrialization, Scientific research, Innovation, Sustainable development, Infrastructure

INTRODUCTION

In 2015, the United Nations General Assembly adopted the 2030 Agenda for Sustainable development. These were 17 goals associated with 169 targets, committed by 193 member countries including India. These goals require efforts to end all forms of poverty, fight inequalities, tackle climate change, foster innovation and sustainable industrialization etc, while ensuring that it benefits everyone and no one is left behind in ensuring sustainable growth.

The Sustainable Development Goals (SDG's) officially known as Transforming our world: The 2030 Agenda for Sustainable Development, are successor and expansion of Millennium Development Goals (MDG's) (2000-2015). The MDG's were eight International development goals agreed by all the world's countries and leading development institutions. The objective of SDG's was to produce a set of universal goals that meet the urgent environmental, political and economic challenges facing the world. The interesting fact about the 17 goals

is that they are interconnected and inter related, success in one goal motivates for the success of others. These goals are sustainable in the sense that they focus on meeting the needs of the present without compromising the ability of future generations to meet their own needs. These goals are to be achieved by 2030.

Sustainable Industrialization (Pradhan, 2017) is a long term process of transforming towards a desired vision of an industrialized economy that contributes to wealth creation, social development and environmental sustainability.

A degraded and non resilient infrastructure makes conducting good business challenging. Business relies on resource, labor and services from all corners of the world. And the ability to access them efficiently will only help in establishing new markets. Information and communication technology is of significant value to most business today as consumers live in every continent. However the things on which

business relies i.e. good infrastructure, supporting technologies, transportation etc is not universally accessible leading to stagnant economies and societal progress. By committing to sustainable industrialization and promoting innovation across business can contribute to development of the regions in which they operate. It is therefore, by upgrading local infrastructure, investing in information and communication technology and by making these technologies accessible to all the people including the marginalized groups, the targets set under Sustainable Development Goal 9 can be met.

SUSTAINABLE DEVELOPMENT GOAL 9- AN OVERVIEW

1. Targets set under Sustainable Development Goal 9

The Sustainable Development Goal 9 consists of eight targets in order to create action to built resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. These goals are as

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follows-

Goal 9.1: Developing Sustainable, Resilient and Inclusive Infrastructure- It includes developing regional as well as trans-border infrastructure in order to support economic development and human well being. Its larger focus is on affordable and equitable access to all.

Goal 9.2: Promote Inclusive and Sustainable Industrialization- The goal focuses on significantly raising the manufacturing industries share of employment in the Gross Domestic Product of the country.

Goal 9.3: Increase access to financial services and markets specially increasing the access to small scale industrial and other enterprises particularly in developing countries. Access to financial services and affordable credit is very vital for any economy.

Goal 9.4: Upgrade all industries and infrastructure for sustainability- The goal focuses on up gradation of infrastructure and industries in order to make them sustainable, efficient and environmentally sound.

Goal 9.5: Enhance research and upgrade industrial technologies- It focuses on encouraging scientific research and innovation which will further lead in up gradation of industrial technologies in order to work together for sustainable industrialization.

Goal 9.A: Facilitate sustainable infrastructure development for developing countries. Its particular focus is to enhance financial, technological and technical support to African countries, Least Developed Countries, Landlocked countries and Small Island Countries.

Goal 9.B: Support Domestic

Technology Development and Industrial Diversification- This goal requires a conducive policy environment for inter-alia industrial diversification and value addition.

Goal 9.6: Universal Access to Information and Communication Technology- Universal and affordable access to internet is very important in order to aim for sustainable industrialization and innovation. Investments in mobile cellular services are very crucial to increase connections between people.

2. Global Initiatives towards Resilient Infrastructure, Sustainable Industrialization and Innovation

The governments around the world, including in emerging markets have stated focusing on sustainable industrialization and it is driven not only by scientific research and innovation and considerations for diversification but it is primarily based on environmental considerations and global commitments. About 193 countries in 2015 committed towards the Sustainable Development Goals and they are making continuous efforts towards promoting sustainable industrialization, fostering innovation and making technology accessible to all. Some of the global initiatives towards sustainable industrialization and innovation are-

- In 2015, Sweden has come up with an ambitious goal to eliminate fossil fuel usage within its borders and ramp up its investment in solar, wind and clean transport.
- European Union has evolved an EU Civil Protection Mechanism where the member states pool resources that can be deployed where a

disaster strikes.

- Canada is investing \$20.1 billion in Public Transit which is an effective means to lessen traffic congestion in order to reduce fuel consumption and air pollution.
- In 2016-17, Canada introduced the workplace 2.0 format for workstations, to make better use of its office place and to modernize the physical aspects of workplace.
- The Australian Building Codes Board has developed a set of specific standards for ensuring structural resilience in commercial and residential buildings.
- In Samoa, the SDG fund is supporting construction of an Organic food processing facility, young people including vulnerable youth, are being trained to find job opportunities in organic production and processing within the key economic sectors of agriculture and tourism.
- In Nigeria, SDG fund is working to strengthen agro- food value chains and promoting access to market. The program will establish a food processing facility, capable of covering its own cost with a hybrid public-private ownership.
- Asian Development Bank is working with Green Climate Fund to support resilient infrastructure investment projects. It has also invested in Green and Gray infrastructure .
- Latin America is also using Grey and Green Infrastructure method to benefit from integrating green or natural infrastructure to build water supply systems.
- China is leading in innovations

through various projects and policies. Over the past decade, Chinese Research and Development infrastructure increased by 21% a year, while Research and Development intensity increased 1795 from 1999 to 2008.

- EU Commission has proposed 'Horizon Europe' an ambitious 100 billion pound research and innovation program.
- UK has invested up to 30 million pound to set up flagship centers supporting the manufacturing supply chain in latest power electronics, machines and drives.
- The African Union, Department of Political Affairs is organizing 'Humanitarian Innovation Challenge' to identify five promising digital technology based ideas to tackle forced displacement and other humanitarian challenges in Africa.

3. India's Efforts to towards Resilient Infrastructure, Sustainable Industrialization and Innovation

The Indian Government has launched various flagship interventions like Make in India, Start up India, as well as Pandit Deendayal Upadhyay Shramey Layate Karaykaram for fuelling innovation and sustainable industrial and economic development.

- 111 million people in India are employed in micro, small and medium enterprises produce 33% of the manufacturing output.
- India has 566 million internet subscribers.
- Mangalyaan is the world's least expensive interplanetary mission to mars.

- In 2019, the Government of India proposed the setting up of a National Research Foundation in the country to fund, coordinate and promote research.
- Make in India is a campaign under Government of India to attract foreign investment and build brand India. Its primary goal is to make India a global manufacturing hub.
- Smart Cities Mission was launched for urban modification and renewal programme to make 98 short listed cities across the country for citizen friendly, sustainable and resilient infrastructure.
- Start up India program was launched in 2016 by Government of India to promote entrepreneurship and more employment opportunities in India.
- Government of India launched Pradhan Mantri Mudra Yojna, the MUDRA Bank, for development and refinancing activities relating to micro units.

ASSESSMENT

The countries all over the world have made efforts in order to build resilient infrastructure, sustainable industries and foster innovation. Infrastructure is the foundation of modern day civilization as it provides us with access to the resources needed to exist at this scale. There is presently 1 trillion dollar global shortfall on basic infrastructure and investment worldwide and SDG 9 can help to overcome it. Infrastructure traditionally has been seen as the domain of public sector but there is increasing intervention from corporate. To address the funding gap, we need alternative means of financing and collaborative public-private governance to provide innovative infrastructure solutions.

As the world begins the implementation of the SDG, 13% of the world's population still lives in poverty and around 80 million people suffer from hunger and 2.4 billion living without better sanitation and health facilities. It is therefore important to ensure that no one is left behind in overarching principles of 2030 agenda. Therefore achieving Sustainable Development goals in a holistic manner requires the partnership of government, private sector, civil society and citizens to make sure that we leave a better planet for future generations.

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