Sustainable Development Goal - 9 "Industry, Innovation and Infrastructure"

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Abstract
Sustainable Development Goal 9 (Goal 9 or SDG 9) is about "**Industry, Innovation and Infrastructure**" and is one of the 17 Sustainable Developmental Goals adopted by the United Nations General Assembly in 2015. SDG 9 aims to build resilient infrastructure, promote sustainable industrialization and foster innovation.
Various actions and policies had been introduced by the UNGA to uplift the industry, innovation and infrastructure (National Investment and Infrastructure Fund (NIIF)),(Global Infrastructure Facility (GIF)),(Global Infrastructure Outlook (GIO)),(Global Energy Transition Index),(National Gas Grid),(Petroleum and Natural Gas Regulatory Board (PNGRB)),(International Solar Alliance),(Atal Jyoti Yojana),(Logistics Performance Index)
We are discussing how the progress of making the innovative world has come. We are summarizing the facts and data collected from surveys from UDGA and how these are going to contribute or have contributed to the innovative world.

Keywords- Sustainable, Development, United Nation, Industry, Innovation and Infrastructure.

INTRODUCTION
Sustainable Development Goal 9 seeks to build resilient infrastructure, promote sustainable industrialization and foster innovation. Economies with a diversified industrial sector and string infrastructure sustained less damage and are experiencing faster recovery. In 2021, global manufacturing rebounded from the pandemic although the recovery remains incomplete and uneven.

LITERATURE REVIEW

EVOLUTION OF INDUSTRIAL POLICIES PRIOR TO 1991
Industrial Policy Resolution of 1948 (IPR-1948)
Under this policy, a system of mixed economy was introduced in India taking the society on a socialistic pattern. The major features of IPR- 1948 were:

- It laid stress on protecting cottage and small-scale industries by giving them priority status.
- Emphasis was laid on workers getting fair wages and social security for harmonious industrial relations.
- Special stress was laid on the development of roads, railways, electricity and irrigation.
- Industries were classified into four broad categories:

1. Industries with exclusive central government's monopoly: three industries here- arms and ammunition, atomic energy and rail transport.
2. Mixed sector, i.e. having both under government and private sectors (basic/key industries): six industries here- coal, iron and steel, aircraft manufacturing, ship building, mineral oil, and telegraph and telephone.
3. Controlled private sector: Government controlled these industries indirectly through strong regulation. These 18 industries include chemicals, sugar, automobiles, cotton and woolen textiles, cement, paper, salt, fertilizer, tractor, electricity, etc.
4. Industries under private sector: Industries not included in the above three categories were included under this category.
5. Stress on the need to promote technical and managerial skills for industrial growth thereby proposing the establishment of ITIs and introducing business management courses in universities.
6. Recognized the significance of foreign capital in the country's development.
7. Private sector and industrial licensing policy.
8. The fourfold classification of industries under IPR- 1948 was changed now to a therefore classification:

- Schedule A (strictly under central government) – 17 industries.
- Schedule B (open to both private and public sectors) – 12 industries
- Schedule c (open to private sector but subject to licensing and regulation) – 40 other industries.

Industrial Policy Statement of 1969

Through this, Monopolies and restrictive trade practices (MRTP) act, 1969 was introduced This Act was recommended by the Dutt Committee to ensure that the operation of the economy does not result in concentration of economic power in the hands of few. However, due to the inherent limitations, MRTP Act was abolished and was replaced by the Competition Act, 2002.

Industrial Policy Statement of 1973

- Six core industries were identified- Iron and Steel, cement, coal, crude oil, oil refinery and electricity. They were also called infrastructure industries.
- Public- private partnership (PPP) was given emphasis and called the joint sector in which a partnership between state and center governments and private sector was allowed.
- Foreign Exchange Regulation Act (FERA), 1973 was enacted.
- India also allowed limited investment by MNCs in the country.

Industrial Policy Statement of 1977

Introduced by Janata Government in 1977, it criticized the 20-year-old industrial policy of 1956 and focused on small-scale and tiny industries. The main elements of this new policy were/

- Tiny Unit was defined as a unit with investment in machinery and equipment up to rupees 1lakh and situated in towns or villages with a population less than 50.000 (as per 1970 census).

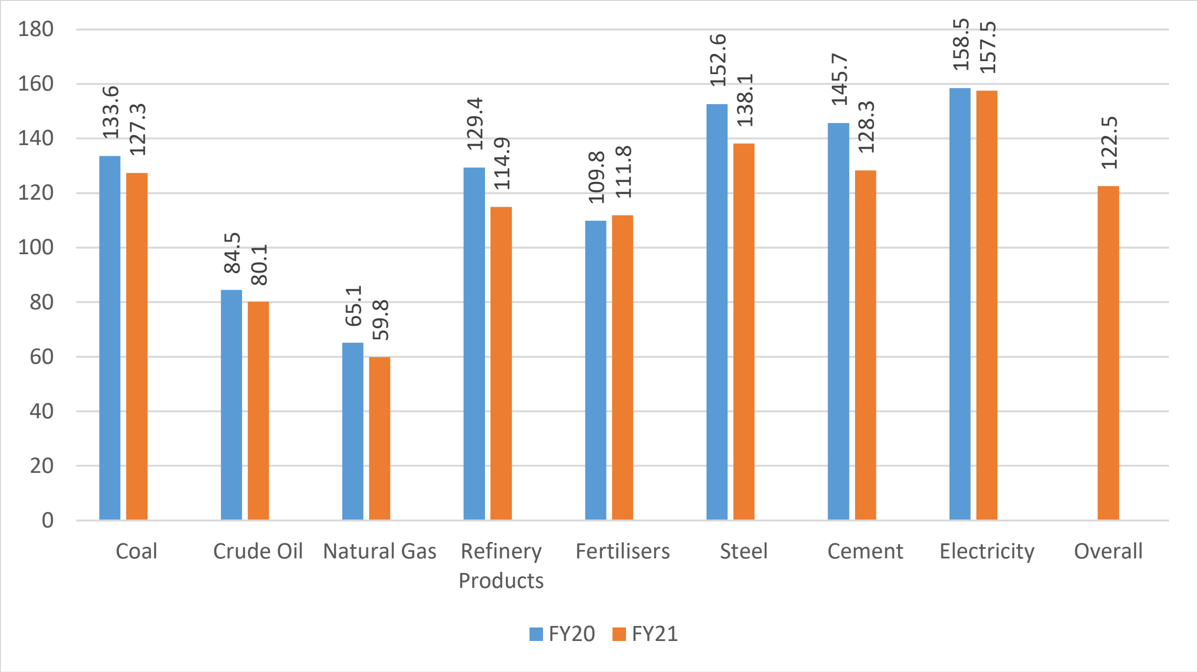
- The policy was also provided for close interaction between industrial and agricultural sectors. Highest priority was accorded to power generation and transmission sector.
- Emphasis was also given on village industries, resurrection of khadi and village industries etc.

Industrial Policy Statement of 1980

- The task of raising the pillars of economic infrastructure in the country was entrusted to the public sector for reasons of its greater reliability, requirement of large investments and longer gestation period of the projects.
- Relaxation from licensing was provided to a large number of industries.
- The investment limit to define small-scale industries was increased to improve the development of the sector.
- Attention was focused on the need for promoting competition in the domestic market, it made technological upgradation and modernization.
- It made the foundation for an increasingly competitive export-based industry and even encouraged foreign investment.

To summarize, the major features of most the pre-1991 policies were:

- Protection to local industries from international competition through high import tariffs and other import restrictions.
- Promotion of import substitution policy by encouraging production of imported goods indigenously.
- Control over Indian industries through licensing regime and stricter regulations
- Restrictions on foreign capital under FERA, 1973.
- Encouragement to small-scale and cottage industries.
- More emphasis on setting up public sector industries.
- De- reservation of Public Sector- The policy drastically reduced the number of industries reserved for public sector. The number of industries reserved for public sector was reduced from 17(as per 1956 policy) to only 8, viz.., arms and ammunition; atomic energy; coal; mineral; oils; mining of iron ore, manganese ore, gold, chrome ore, gypsum, sulfur and diamond; mining of copper, lead, zinc, tin, molybdenum and wolfram; atomic minerals; railways transport.
- Foreign Investment was promoted, in both direct and indirect forms. The Foreign Investment Promotion Board (FIPB) was also established to promote FDI.
- Foreign Technology Agreement allowed industries with automatic approvals (within specified parameters) for undertaking technology agreements with foreign counterparts.
- Amendments in MRTP Act so that firms with assets above a certain specified limit were to longer required to get prior approval from the government to invest in de-licensed industries.
- Dilution of protections earlier provided to small-scale industries (SSIs) in order to promote their competitiveness.
- After 1991, Industrial reforms through LPG (Liberalization, Privatization and Globalization) were undertaken (LPG strategy is discussed in the ‘Economic Planning’ chapter).



OBJECTIVE OF THE STUDY

This paper is a status paper which contains a detailed account of the past studies, present challenges and scope it hold for future research/findings

RESEARCH METHODOLOGY

Library Research was conducted to clearly define the subject and understand the in-depth study carried out in the subject. Article database and Google Scholar are the tools that are used to review available literature and/or data, or qualitative approaches.

Limitation of Research: Survey does not include the latest survey conducted to check the progress of the sustainable development.

FINDINGS

Contribution of Infrastructure to economic development

The presence of infrastructure leads to:

1. Enhancement of productivity in all the three sectors- Agriculture, Industry and Services.
2. Social transformation by enhancing opportunities for marginalized sections.
3. Development of backward regions and removal of regional imbalances.
4. Employment generation through increased investment and capital formation.
5. Providing urban amenities in rural areas.
6. Faster and inclusive development.
7. National security like work done by border road organization in border areas.

Infrastructure Development as a sine qua non of Economic Development

Development of infrastructure is certainly a sine qua non of economic development. For ex. The development of industries depends upon the development of power and electricity generation sector, transport and communication sector, etc. Similarly, the development of service sector depends upon the efficiency of the human resource which can be achieved through effective development of soft infrastructure.

Thus, if adequate attention is not given to the development of infrastructure, it will work as a hindrance to the economic development of the nation.

Funding of infrastructure and various models

Funding of infrastructure is done through heavy investments. The various models of investment are Public Investment Model where the government invests from its resources, Private Investment Model where investment comes through private companies and institutions i.e. domestic and foreign investment and Public-Private Partnership(ppp) Model which intends at implementing the government programmes in partnership with the private sector which gets the chance to design and operate on the public sector programme and projects of the country. There are various variants of ppp model

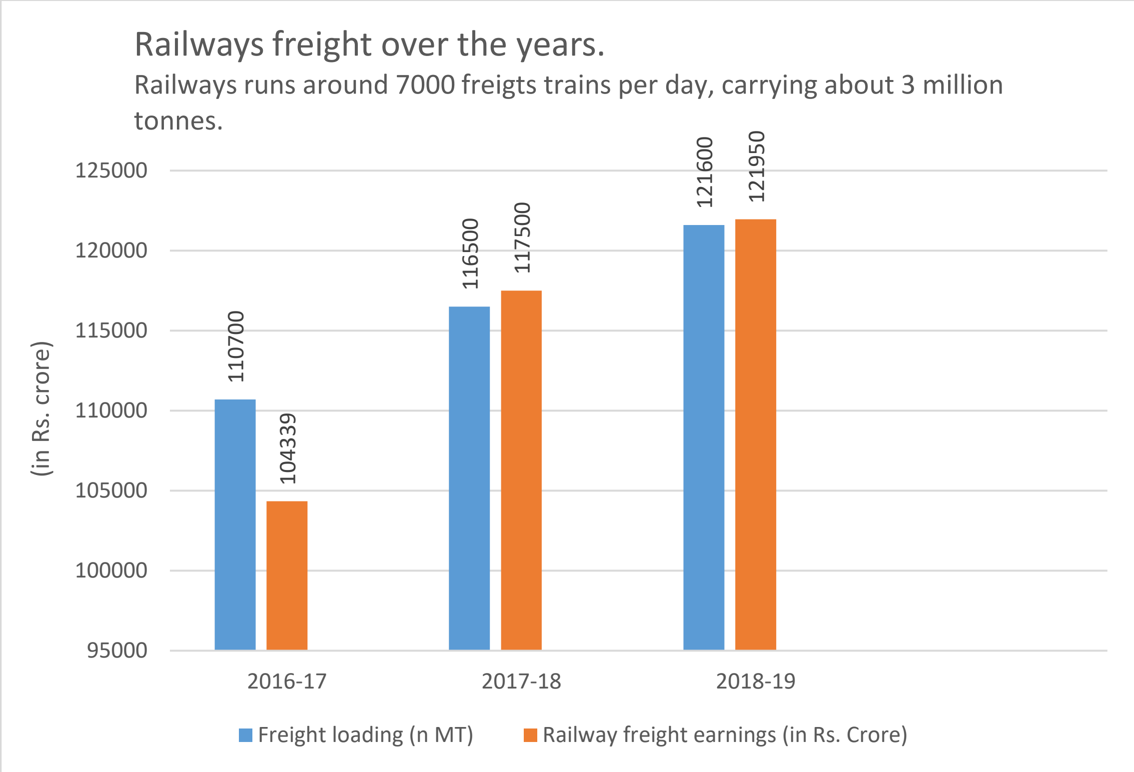
Present challenges in infrastructure sector

- Poor functioning of the ppp investment models (especially in the power and telecom projects).
- Land and forest clearance issues in terms of delays etc.
- Lack of funds in the balance sheet of the private infrastructure companies.
- Lack of effective planning for execution of projects.
- Excessive burden on the roadways.
- Obsolete infrastructure.

Recent Government Interventions

PM Gati-Shakti Initiative

- The recently launched PM Gati-Shakti – National Master Plan for Multi-model Connectivity, is essentially a digital platform to bring 16 Ministries, including Railways and Roadways together for integrated planning and coordinated implementation of infrastructure connectivity projects.
- The multi-modal connectivity will provide integrated and seamless connectivity for the movement of people, goods and services from one mode of transport to another.
- It will facilitate the last mile connectivity of infrastructure and will also reduce the travel time for people.
- It will incorporate the infrastructure schemes of various Ministries and State Governments like Bharatmala, Sagarmala, inland waterways, dry/land ports, UDAN etc.
- Economic Zones like textile clusters, pharmaceutical clusters, defense corridors, electronic parks, industrial corridors, fishing clusters, agriculture zones will be covered to improve the connectivity and make Indian businesses more competitive.



Sector, Wise performance and Government Interventions

- It comes under Economic infrastructure.
- Indian energy sector has observed a rapid development in recent times.
- According to the International Energy Agency (IEA), India accounts for 5.8 per cents of the global energy consumption and ranks third in it after the United States and China.

SMART CITY MISSION

- The aim is to develop 100 smart cities.
- The mission is being implemented by the Ministry of Housing and Urban Affairs.
- Under this, the four key ingredients for a developing urban ecosystem are institutional physical, social and economic infrastructure.
- The core infrastructure elements in a smart city would include adequate water supply, solid waste management, efficient urban mobility and public transport, affordable housing, especially for the poor, robust IT connectivity and digitalization, good governance, sustainable environment, safety and security of citizens and health and education.
- The selection of the 100 cities by GOI has been done through a challenge competition. At present, these cities have incorporated special purpose vehicles (SPVs), city level Advisory Forums (CLAFs) and appointed Project Management Consultants (PMCs).
- Year 2020 witnessed launch of 2 new indices by the Ministry of Housing and Urban Affairs to assess quality of life of citizens in 100 smart cities and 14 other million plus cities. Those two indices launched are - Ease of Living Index so as to assess the ease of living of citizens across three pillars; Quality of life, Economic Ability and Sustainability and another one is Municipal Performance Index so as to assess the performance of municipalities based on five enablers, i.e. service, finance, planning, technology and governance.

- Participation of citizens in planning and implementation of the mission is also there to ensure sustained accountability.

CURRENT TREND IN INDUSTRIAL SECTOR

- Industrial sector contributed 29.35 per cent of the GDP of our country in 2020-22. In 1950-51, it was just around 15 per cent.
- As per the recent Economic Survey 2021-22, industrial sector's overall contribution is gross value added (GVA) is estimated to be 28.2 per cent din FY 2021-22. Annual growth of GVA of Industry sector for 2021-22, at constant (2011-12) prices, has been estimated to be 11.8 per cent which is 104.1 per cent recovery over- 1.2 per cent growth rate to 2019-20
- Thus, it can be interpreted that after independence, it initially showed a rising trend towards its contribution/share In GDP. However, with the rapidly increasing share of service sector, the share of industry in overall GDP started showing a fluctuating trend.
- Major sectoral classification under industrial sector:

1. Mining and quarrying
2. Manufacturing
3. Electricity, gas, water supply and other utility services
4. Construction

- Among above four, manufacturing sector has the major contribution towards GDP.
- In the current FY 2021-22, majorly due to the recovery from COVID- 19 pandemic, all the sub-sectors under industrial sector recorded a significant positive growth rate.

Conclusion

Detailed study has made it clear that innovations are vital for the growth of industries which further lays foundation for development of infrastructure and nation. It is essential for any developing nation to do planning and make policies so as to boost research and innovation in the nation thus not only making country grow but also to improve upon the living conditions and quality of life on its nation.

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