

Innovation and Sustainable Development Goals (SDG) in India

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ABSTRACT

Sustainable development (S.D) has become very important among policy makers as an alternative model of development. Innovation becomes necessary for achieving sustainable development goals. There are several forms of innovations like inclusive innovation, mission oriented innovation and grassroots innovation. These innovation will help counties to achieve national development while are dealing with societal issues and environmental challenges. India has accepted SDG as the foundation of its development plan. Several important initiatives have been undertaken Jal mission, Digital India, affordable health systems are being implemented for achieving SDGs.

Introduction

Sustainable development (S.D) has been gaining attention in the last few years from academicians, policy makers, national governments as an alternative model of development. One of the key areas that have been connected to S.D is the important role of innovations in promoting sustainability. Innovations are important ways in which in which external environment in which we live can be altered to make it more habitable and suitable for the environment. Introducing innovative processes are the ways in which communities and societies can implement Sustainable Development Goals (SDGs). However, the reality is that while countries have committed themselves to achieve SDGs, the pace of adoption of SDGs has been slow and challenging. There is a need for more commitment through investment and activities from all stakeholders to accelerate the pace of SDG implementation. In this context, developing innovative methods of integrating social, economic and environmental solutions to achieve sustainability in the process of development is the call of the hour.

Importance of innovation

Innovation for Sustainable development is crucial. It is also a very dynamic and complex process. Adopting sustainable methods for achieving not just high growth but taking care of environment and society requires innovation. It requires changes in method of production, products created, management attitude and policy orientation. Therefore, change is a must if institutions, companies, policy makers and local communities are committed to SDGs. Let us focus on some of the challenges that society faces in achieving sustainable growth.

Environmental challenges: The biggest challenge that the world is facing in recent years is related to environmental issues. These challenges are related to air and water pollution, waste disposal, climate change and rising temperature levels. Today research is going on in the area of sea level rise, food security, rising temperature, agricultural productivity. It is generally recognised that environmental damages are primarily caused by what people consume and how they utilize resources. Environmental challenges do have negative impact on other two dimensions of sustainability: Economic and social. To address the issues related to environmental degradation, researchers have been examining and proposing solutions that would help to remove the worsening effect human activity on the environment.

Efforts have to be made to create green business models which will help to overcome the problems of environment and help to restore the natural environment. For developing green business models, innovation is a must. Developing innovative business practices has to be adopted so that the focus is to the reduce the impact of industrialization and supply chains on the environment. Organizations have to improve their environmental performance and adopt green models which increase their sustainability trajectory. Business has to be prepared to adopt innovative practices in their regular operations for these innovative models to be successful. The path towards green approaches require the top management and employees within the organization to be willing to adopt new practices in their day to day operations.

Social Challenge: Another persistent issue which prevents the society from realizing progress based on sustainability are the problems related to social issues. Some of the important issues that society faces are poverty, inequality and social exclusion. Social issues focus on how those challenges that have impact on the common people living in communities and how they face these problems. Social challenges do have a negative economic impact as it affects growth in the country. Just like green models, social business models have been developed by organizations to reduce the impact of their activity on the community in which they operate. Social model are based on corporate social responsibility initiatives undertaken by companies.

Need for new innovative approaches for achieving SDGs

The 2030 United Nations Agenda for Sustainable Development has established an extensive objectives and targets for countries to take action for achieving sustainable development. To achieve goals by 2030, new models of development are required for achieving the goals of development with social development and environmental protection. Innovation will play a key role in achieving these goals. Till the 1980's, people's attitude to innovation was considered as a commercialization of scientific discovery by big companies. It was mainly driven by profit orientation of big companies. This attitude to innovation has given way to more humane way of looking at innovation. Today there are organizations who are working in the economic, social and environmental domain who are combining national development, social development with profits. Innovation today is adopting techniques of business solution as well as adopting technology that are new to the organization and the country. A more recent interpretation of innovation is that its impact on society is more important than mere research and its development. How research helps to create a meaningful impact on people's life is more important than profit. Thus innovation is a combination of social practices and technology to achieve sustainable growth. It is a blend of design, management and entrepreneurship. The underlying framework to innovation is that of supporting economic growth with the belief that innovation led growth will create an environment of social progress while also taking care of the environment.

Focussing on higher growth over the years has led countries to face two main challenges. Firstly, the world has witnessed higher economic growth along with increase in levels of absolute poverty and rising inequality. Secondly, some of the innovation already implemented in the world has been harmful to the society and the environment in which they have been implemented. It is widely recognised that these problems is unlikely to be resolved by using the existing techniques. More fundamental changes are required in the system of production and consumption, energy and industrial growth to avoid disastrous changes in the environment and climate change. Unless innovative practices are developed, it is difficult to achieve the goal of sustainable development.

The new forms of innovation

Some of the new forms of innovation which focus on sustainable development are as follows.

- 1) **Mission oriented innovation:** The objective of this innovation programme is to create the incentive structures than can direct the innovation towards the achievement of specific technological, environmental or social objectives. Philanthropic Institutions such as Bill and Melinda Gates Foundation provide financial support with both development and health objectives in developing countries like India. These innovations are created for dealing specific issues related to basic services in the society and human welfare.
- 2) **Inclusive innovation:** This type of innovation is meant for the marginalized communities in society. This type of innovation extends the benefits of innovation and building on new ideas of innovation to the bottom of the pyramid. The focus is on poorest in the society. This kind of innovation helps to develop new concepts. Another advantage is lower costs and higher economies of production which help to serve markets previously ignored by profit oriented innovation. Examples of pro-poor and inclusive innovation include affordable health care in order to benefit low income patients.
- 3) **Grass root innovation:** This includes creating innovative process to cater to the grass root level by working with rural communities and local people. The approach is aimed at combining technology with social inclusive projects. This type of innovation is more concerned with social and environmental issues at the local community like rural areas. They are not driven by motives of competitiveness and profit in business. There is vast opportunity for waste management at grassroot level involving local communities. Waste generated out of old textiles like jeans can be recycled into beautiful decorative items and footwear.
- 4) **Social innovation:** Social innovation focusses on social issues. There foundation is to deal with social issues like education and health care in local community. The aim is to improve well-being of individuals through changes in business models, production practices and availability of affordable financial assistance. Some of the examples of social innovation are in the field of clean water projects, Sustainable energy projects and Digital education projects.
- 5) **Digitally enabled and collaborative innovation:** Such innovative practices are based on making use of technology and knowledge especially through open collaboration in digital arena. The two key features of this innovation is open access to knowledge and greater participation of individuals in developing innovative ideas, products and technologies. It also requires increasing use of the internet; digital technologies and social media to encourage learning among students. Collaborative innovation will assist in creation of new knowledge and provide access to free E-resources.

SDG and Innovation in India

SDGs have been instrumental in shaping India's national development goals. India has worked towards developing policy and action plan on all the sustainable development goals addressing issues of poverty eradication, achieving gender equality and quality education. The Niti Aayog with the Prime Minister as its chairperson provides the overall coordination and supervision for implementations of SDGs. Niti Aayog has carried out a detailed mapping of the 17 goals and 169 targets under SDGs. The responsibility of achieving the SDGs has to been given to Central ministries, State

Governments and major Government organisations. Some of the innovative programmes which have been launched in India for implementation of SDGs are given below.

The Jal Jeevan Mission: The Jal Jeevan mission is an example of mission oriented innovation. The mission was launched by Government of India in the year 2019. The objective of the mission is to provide tap water supply to every rural household by 2024. This will help to increase water supply in both rural and urban areas and thereby improve public health. The mission will help to achieve sustainability with recharge and reuse of water sources. The mission will focus on grey water management, water conservation and rain water harvesting. It also involves active participation of the community in water management along with providing information on the same. The objective is to raise awareness about the importance of safe drinking water. The positive feature of this programme is the community level participation in water supply related issues at the village level. It also incorporates creation of village water and sanitation committee, testing of water samples and community participation in designing, implementation, running and maintaining water supply systems.

Society for Research and Initiatives for sustainable technologies and Institutions (SRISTI): SRISTI is an initiative at grassroots level. The organization was set up in 1993. The organization aims to harness the creativity of individuals at the community level and promote the innovation among them. The idea is to look for eco-friendly solutions for issues at the community level. It nurtures eco-preneurers working for protecting local biodiversity, cultural diversity and educational innovations. SRISTI works towards protecting knowledge rights of local communities and individuals. The aim is to support grassroots innovation from across the country. The organization supports sectors like agrochemicals, cosmetics, biotechnology and bio fertilisers. They help start-ups from the initial stages of idea generation to all the way to the process of commercialization of the product or technology or service.

Affordable Healthcare: Affordable health care in India is an example of inclusive innovation. Health care industry is considered as one of the fastest growing sectors in India. However accessibility and affordability of healthcare is one of the biggest challenges in India. It is essential to make healthcare affordable for vast population in India who have to sell assets to avail of medical care. This provides a big opportunity for society related innovation in India in the field of healthcare. Some of the areas in healthcare where innovation is required are newer diagnostic tools, healthcare facilities, medical devices and advanced technologies. An example of such facility is mHealth which is a mobile text messaging App. mHealth helps patients, health workers, and researchers to gain access to healthcare information and services. Another example is setting up of medical mobile units to increase accessibility in rural areas. AKHA Boat clinics and Piramal's HMRI mobile vans in Andhra Pradesh. The boat clinics provide Primary Health Centre (PHC) and have provision for all the basic health facilities, such as the laboratory, OPD and pharmacy. Another example is Aravind Eye Care which has revolutionized the eye care treatment in India by providing high quality care at affordable costs. Its business model focuses on achieving this goal leveraging economies of scale and cross subsidisation.

Digital India: India has been at the forefront of promoting digital revolution through the Digital India Programme. It is based on application of advanced technologies like mobile, cloud and data analytics. The core of the Digital India programme is to provide citizen centric services in the country. Some of the important digital based programmes introduced in India include Aadhar Card providing universal digital identity, Jan Dhan yojana based on financial inclusion and Direct Benefit Transfer to all genuine beneficiaries.

Digital India uses technologies such as artificial intelligence (A.I), Internet of things (IOT), cognitive analytics in the field of education, health and E-governance for achieving sustainable development. Digital India actively works towards creating an environment of innovation and promotes inclusive growth with active participation of both Government and citizens.

Social innovation in agriculture: Agricultural sector employs around 43% of the workforce in India and contributes around 17-18% of the country's GDP. However, the problem with this sector is that it has remained confined to traditional and obsolete methods of production thereby impacting productivity of this sector. However, this trend has witnessed a transformation in recent years with young innovators playing an important role in increasing the scope for agriculture technology in India. Precision agriculture has emerged in India. It is the method by which the correct amount of inputs is put at the right time to the crops to increase the productivity and maximize the yields. The use of GPS allows precise mapping of farmlands. An example of this is that farmers in Karnataka and Andhra Pradesh are using text messages before the sowing of seeds. Farmers receive automated voice calls to alert them if their cotton crops are at risk of pest attack based on the weather circumstances. Smart cameras are used to identify ripened crop so that they can be plucked in time. Agricultural robots are being used to pick specific crops like vegetables and fruits. Gadgets like budget smartphones, internet, smart agri start-ups and growing regional online content are all helping farmers in their occupation. The Government is also doing its best to boost innovation in agriculture through initiatives like AGRI-UDAAN that that mentors start-ups. E-NAM is another initiative that has led to creation of National level agricultural markets helping in price dissemination and transparency in trades.

Conclusion

Innovation forms the foundation in any society to achieve sustainability. Issues that affect the community in which we live today require innovation in thinking, designing and implementation. Right from agriculture to health to education, innovations are needed to change the traditional way of production. Even in India, several initiatives are being undertaken to create innovative practices for SDG. These are being initiated both by Government as well as private sector. In the end, it is the joint effort of Government, policy makers, local communities coming together to create innovative solutions to achieve sustainability in development of the nation.

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