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Research Article

SMART AND SUSTAINABLE RURAL DEVELOPMENT

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ABSTRACT

In India, too much discussion and deliberations are taking place every where to build smart cities but there is less discussion to build villages/rural areas smart and sustainable. Making rural areas smart and sustainable is imperative because it is aptly said about India that India live in villages and if farmers are happy then and only then the city dwellers will be happy and prosperous. The future growth of Indian economy is in rural areas because urban places have almost reached to their saturation level. Only developing smart cities will create, 'an island of opportunities in the ocean of dissection and distress' which is not sustainable. We must give top priority to the 'smart rural development', preserving the sustainability of rural areas will positively impact the cities and every sector of economy in long run and will also provide potential to smart cities.

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INTRODUCTION

In India there are 610 districts, (200 backward) 600,000 villages (125,000 backward.) About 800 M people in India live in villages and at least half of them are below 25 years of age. The Government is taking responsibility for uplifting the rural and the economically poorer regions. There is lot of public spending to improve the infrastructure, water and sanitation in these areas. However, these efforts are disparate, fragmented and piecemeal and not much improvement has been achieved in most of the villages. There is a need for designing and building Smart Villages which are independent in providing welfare services and employment and yet well connected to the rest of the world.

A Smart Village is a bundle of dozens of services delivered effectively to the residents and businesses in an efficient manner. These services could be location specific depending on the demography of the village and occupations of the residents. These services such as Power, Water, Buildings, Retail, Health care, etc. were built several decades ago. New designs, technologies and management models should be used to upgrade the existing ones and in building the new ones. This requires standardization, use of IT and sensor networks. Requires strategy, integrated planning and above all monitoring and execution of the activities using appropriate governance models Almost 70 per cent of the Indian population lives in

villages. Therefore it is natural that for 'inclusive' development, the Government must focus on them. Placing the emphasis on creating 'smart cities' is flawed policy. We must give top priority to the development of 'smart villages' preserving the sustainability of villages will positively impact cities in the long run.

In recent times, more cases of farmers' suicides due to crop failure have been reported. Even after 70 years of independence, we lack a 'support and guidance system'; nor do we have professional counseling for farmers. Many of them have no secondary source of income this is a major lacuna. The lack of job opportunities in villages coupled with less remunerative farming (except in the case of large land holdings) compels village youth to migrate to cities. There, many of them do not enjoy a reasonable quality of life because they manage to get only subsistence jobs. The migration is also unidirectional as they continue to live in cities in the hope of landing better jobs. In the long term, this leads to desertion from villages, dilution of village culture, reduced land under cultivation and, consequently, farm output. In the cities, uncontrolled migration adds to pollution, traffic problems, crime, and over burdening of civic amenities and infrastructure.

Towards self-sustenance

The top priority should be the creation of opportunities for

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youths in villages, thereby discouraging migration to cities. Farming should be made a remunerative occupation, with guidance and mentoring to small farmers on how to get the best yield and market at remunerative prices. It's important to train them to develop a secondary source of income. The benefits of schemes such as crop insurance, soil health card, and neem pesticides must reach the grassroots. Proper implementation is key. A helpdesk set up in every village and manned by trained individuals to handle farmers' queries and provide solutions would be most useful.

We must create an eco-system that makes youth interested in working from their villages. BPOs/KPOs can operate from villages and young people can be encouraged to take up IT jobs there. Many jobs require computer skills instead of degrees. The digitization of post offices, rural banks, and IT-enabled services provide excellent opportunities. Projects supported by Digital India and Skill India should be integrated through a unified agency to reach villages. For instance, Skill India can empower youths to start their own small businesses after training as masons, mechanics, electricians, and drivers or to run repair shops, poultry and dairy farms, kirana stores, tea-shops, dhabas and so on.

India's crafts thrive in villages, especially as cooperative ventures. Pottery, metal craft, weaving, jewellery making, wood craft, shell craft, cane craft, embroidery, ivory craft, glass craft and paper craft could be sources of income. The arts and crafts ecosystem of villages is impossible to recreate in cities. A great deal of export potential is hidden here. Senior/elderly artisans can be employed as 'trainers'.

Inclusive approach

We have sizable tribal population in India, who live in villages, and do not wish to be uprooted. We need to make them part of development. Skill India can study the art/craft unique to each tribal cluster and train their youths to grow in their vocations. They will come into the mainstream by learning the use of new tools and techniques, without the fear of losing their lands, identity and culture.

Villages traditionally preserve large number of water bodies like ponds, wells, bawadis, canals etc. Training villagers in water harvesting methods, rejuvenating ponds/wells to improve water storage and sharing these good practices systematically with others, would help mitigate hardships. The NITI Aayog can draw a master plan to make every village smart in the next five years. Invite support from private institutions or NGOs; however, execution must remain with a governmental 'nodal agency'.

Smart villages can translate into improved farm productivity, water conservation and economic independence to village youth. It makes great social, economic and political sense.

Components of Smart Village

A 'Smart Village' will provide long-term social, economic, and environmental welfare activity for village community Which will enable empower, and enhanced participation in local governance processes, promote entrepreneurship and build more resilient communities At the same time, a 'Smart Village' will ensure proper sanitation facility, good education, better infrastructure, clean drinking water, health facilities,

environment protection, resource use efficiency, waste management, renewable energy etc.

Government Programs for the Villages

Major Programs in Agriculture

- National Agricultural Development Program
- Accelerated Irrigation Benefit Program
- Fertilizer Subsidy
- Bank loans, Free Electricity

Major Programs to Improve Employment

- Public Distribution System.
- Mahatma Gandhi National Rural Employment Guarantee Scheme.
- National Food Security Bill.
- Pradhanmantri Kaushal Vikash Yojana.

Major Programs & Partnerships to Improve Nutrition Security

- Mid-Day Meal Scheme.
- Integrated Child Development Scheme (ICDS).
- Annapurna Scheme (Ministry of Rural Development) for senior citizens.
- The Nutritional Program for Adolescent Girls – Emergency feeding program (in eight districts in Orissa).

Smart City-Smart Village program

The Smart Village program in turn, will realize functional needs for self-sustained energy, clean water and waste management, in off-grid areas. For villages with ready basic infrastructure, ICT solutions will serve as enablers for connectivity between communities and provide remote access for E-Learning, E-Health and E-Business, which will further catalyze socio-economic growth. This 'Smart Cities and Smart Village Status' program will provide opportunities through inducing new focused market for technopreneurs/SMEs in ICT and green technology development by providing strategic enablers such as incentives, etc.

The key objectives of the Smart City-Smart Village program are as follows

- To accelerate economic growth by providing connectivity and information/knowledge sharing towards increased productivity,
- To significantly enhance quality of life for the Rakyat in a safe and secure environment to live, work, learn & play,
- To support a greener environment for social & economic sustainability through improved resource planning.
- Future generations will contribute immensely in development process and enjoy the traditional agriculture activity with the use of modern technology.

Following are some potential areas, where Smart Village may create measurable and significant impact.

Organized Settlements

The village population is distributed in a staggered manner and they are not well-connected to the village roads. These may be re-distributed preserving proper zones for habitation,

playground, agriculture land & areas to develop various infrastructures like bio- fuel generation center, overhead water tank.

Smart Agriculture

In order to increase the quality and quantity of agricultural production is using 'Sensor' technology to make farms more 'intelligent' and more connected through the so-called "Precision agriculture" also known as 'smart farming'.

Road Infrastructure

GIS analysis ensures all the houses in rural areas are well connected through rural road.

Smart water supply

There should be provision for water supply for agricultural, household use and drinking, which may facilitate effective and judicious utilization of the surface and ground water resources.

Smart sanitization

Smart equipment may be adopted in rural areas to facilitate disease free villages.

Education

GIS analysis may be carried out to find suitable locations to establish state-of-the art education hubs for the villages. Virtual classroom facility may be provided to use the benefit of available experts at other locations.

Disaster management (DM)

Villagers are easily affected by disasters due to lack of preparedness. DM cells may be set up at the Panchayat level to address all the disaster related issues. DM cell will connect to the National Disaster Management Authority (NDMA) through the central server for monitoring the future scenarios.

CONCLUSION

On basis of above information we can say that the government will focus on climate change, smart energy, agriculture, and water in the development of smart villages. Smart village development will come about in the state in coordination with Environment Planning and Coordinating Agency (EPCO). Taking education, skill for vocations etc to villages can well channelize the energies of the youth as a powerful tool for the nation. An educated rural youth will be an asset to the country and even if he shifts to a city he shall prove to be an asset rather than a burden as is happening now. India needs educated population and not literate but uneducated otherwise all the smartness of cities or villages will result in failure.

The idea of smart village in the present day context seems more plausible as there is a limit of growth of cities which is leading to creation of urban jungles, where the population ratio per km of land is way above the desired norms. To take baby steps initially would lead to a campaign at National level once the fruits of this effort start bearing fruits, which surely would be visible for all to see sooner than expected. And it promotes socio economic development of the Nation.

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