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Smart Villages: Progress of Indian Era – Today's Need

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Abstract: ***This review paper deals with the progressive conversion of any ordinary village to the smart village or village equipped with all necessities of life. A Village to be a smart area to live in should have an access to sustainable energy resources/services that acts as a catalyst for the overall development of it enabling the provisions for better education, healthcare, access to clean water, sanitation, nutrition, growth of productive enterprises to boost income, enhanced security services, gender equality, democratic engagement, etc.***

Keyword: Sustainable, Smart, Women Empowerment, Reverse osmosis (RO), NGO's, CCTV'S

I. INTRODUCTION

The main objective of this paper is to analyse the quality of life spent by humans in the villages of India and suggest ways/measures to improve the same. The study followed a methodology of combining field visits, intensive village studies using a case study approach, analysis, focus group discussions with field officers of the government and the various NGO'S .

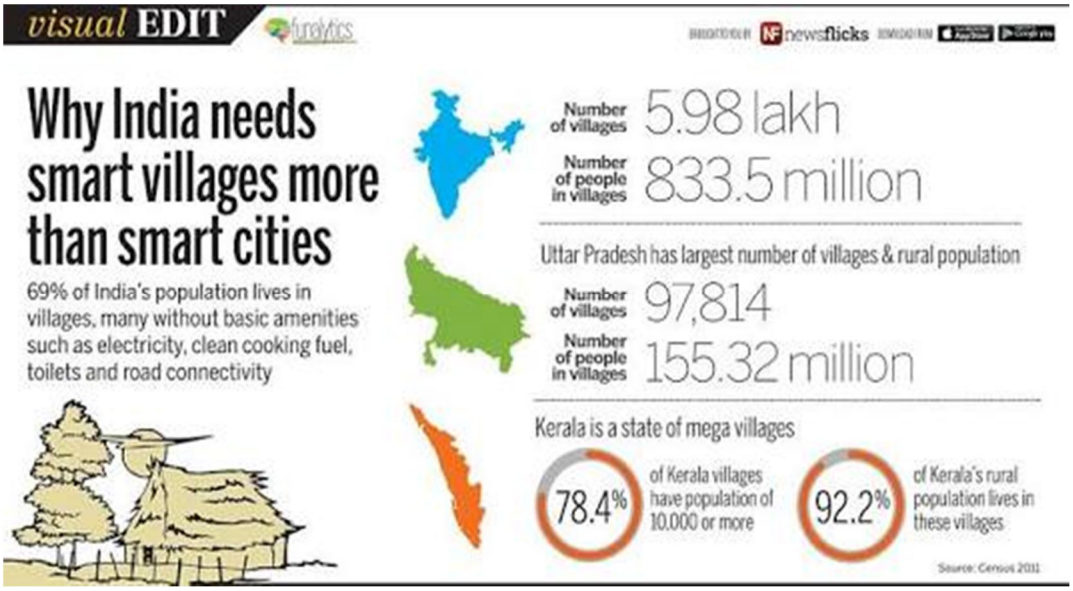

Fig 1. Smart Village – India's Need

The results of the study is analysed and discussed here. This paper presents an introduction about the state including the demographic and other related parameters. This is followed by a review of approaches in the five year plans in selected sectors such as forest, land, agriculture, joint forestry, drinking water and energy and rural infrastructures provides case studies with respect to nine village study analysis provides the summary of varying situations across the state's villages with insights into the development with micro level perspectives.

II. CONCEPT

The basic concept of smart village is to collect community efforts and strength of people from various streams and integrate it with information technology to provide benefits to the rural community. According to Mahatma Gandhi's philosophy and thoughts, smarts village project provides, "Global means to the local needs."

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The concept of smart village is defined as below,

S	Social, Skilled, Simple	Zero tolerance against caste based differences or any type of discrimination on grounds of gender & religion, Skilled people with new, innovative & modern thinking approach
M	Moral, Methodology, Modern	Moral values applying with modern techniques, to get in touch with the best suitable methodology for the job
A	Aware, Adaptive, Adjustable	Awareness of global, social & economic issues. To be adaptive to the fast changing environments of different arena
R	Responsive, Ready	Ready to be cooperative at each level of any kind of work. Responsive for efficient working of local & administrative governance
T	Techno savvy, Transparent	Transparent governance, techno savvy use of IT resources, efficient use of online services bringing computer in daily usage.

Table 1. SMART's Abbreviation

III. SERVICES ESSENTIAL/REQUIRED FOR SMART VILLAGES

A. Food security for all
B. Health welfare of all living organisms in ecosystem
C. Environmental development
D. Personality development of each individual
E. Democratic engagement of people
F. Efficient governance
G. Social development
H. Education : Basic knowledge with higher studies
I. Local business : regional economic development

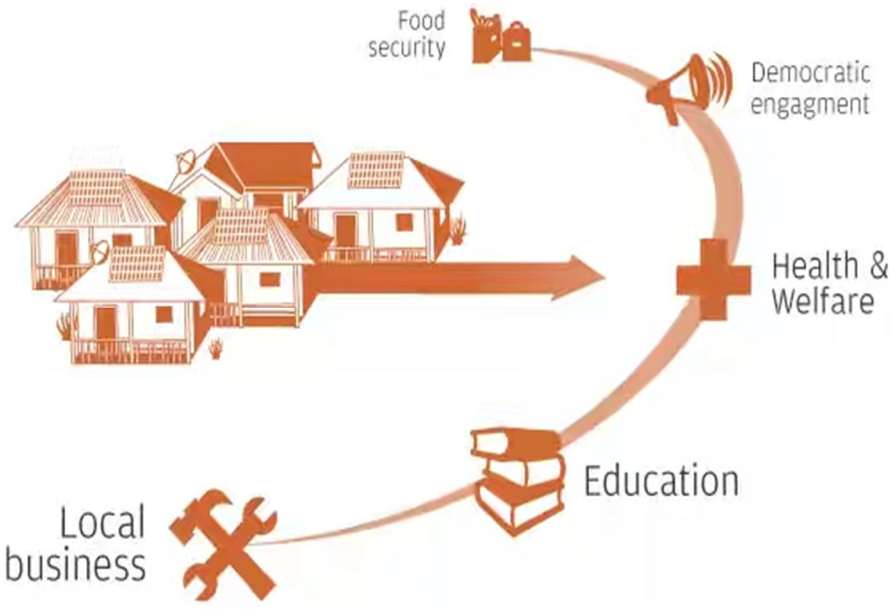

Fig 2. Needs of any Smart Arena

J. Responsible & efficient security
K. Sustainable energy conservation
L. Better education facilities
M. Women empowerment
N. E-governance
O. Use of modern technologies

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P. Latest and affordable medical facilities
Q. Unconventional facilities regarding agriculture
R. Functional bank accounts for each individual
S. Proper grievance redresser
T. Uses of renewable energy
U. Safe drinking water facilities
V. Rain harvesting and rain water drainage system
W. Solid, semi-solid & liquidise waste management
X. Improved sanitation condition
Y. Efficient public transportation system

IV. BENEFITS

A. Locally produced and Consumed Energy

In villages with the mountains, hilly areas or any other demographic advantage are present then use of solar energy and wind energy then energy is produce in that village itself and use for development of village.

B. Creation of job

Generally village people migrate from village to city for purpose of job. If village becomes smart so all the job requirements are fulfils may be fulfilled and people would not migrate from village to city.

C. Contribution to Global Environment

The system can reduce reliance on fossil and contribute to reduction of greenhouse gases such as carbon dioxide, Energy consumption optimization 25-30% average energy saving.

D. For farmer e-learning etc., facility that will be able to ask there queries online.
E. New technology in education, E-learning, desktop publishing, transportation, generation of interested person of the village. Transportation of village into comfortable and safe space that enhance quality.

V. AWARENESS PROGRAMMES FOR PEOPLE:

A. NGO'S play important role in development of rural India. NGO'S acts as planner and implementers of developmental plans and performs a variety of services and humanitarian.
B. NGO'S play role in co-ordination, collaboration and bridge the communication between the government private sectors.
C. The project like construction of dams, roads, highway, railways play important role in regional development.
D. The NGO'S has a very a very important in protection of environment through social services. NGO'S are taking up this job sportingly and successfully.
E. Swachh Bharat Abhiyan: On 24 September, 2014, Prime Minister started the Swachh Bharat campaign, which was a modification of the Nirmal Bharat Programme, launched by the previous government, The Swachh Bharat Abhiyan was launched formally on October 2, 2014, on the anniversary of Mahatma Gandhi. The objective is to make India a clean India by 2019, the plan is to provide toilet and sanitation facilities in all rural and remote areas ,to create public awareness on cleanliness, to clean roads, streets, encroachments and make India one of the cleanest countries of the world.
F. Saansad Adarsh Gram Yojana**:** on October 11, 2014 prime minister Narendra Modi launched the same According to this scheme, each MP would take the responsibility of developing three village by 2019, The idea is to make Indian village to be fully developed with physical and institutional infrastructure, there are certain guidelines for this scheme, which has been formulated by the department of rural development, Govt. of India The prime minister released the guidelines on October 11, 2014 and requested all MP's develop one model village by financial year 2016 in their constituency and two more by 2019.
G. Beti Bachao, Beti Padhao Scheme: After the successfully implementation of innovative schemes like Jan Dhan Yojana, Make in India, and Swachh Bharat Abhiyan, prime minister Narendra Modi launched one more scheme "Beti Bachao Beti Padhao (save girl child, educate the girl child), on January 22, 2015 in Panipat, Haryana.With an initial investment of ₹ 100 crore, the scheme has been launched in hundred districts across the country. In Haryana, where the child sex ratio (CSR) has been dismally low, 12 districts have been chosen: Rewari, Mahendragarh, Bhiwani, Jhajjar, Ambala, Kurukshetra, Sonipat, Rohtak, Karnal, Kaithal, Panipat, and Yamuna Nagar.

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VI. INFORMATION / DATA FOR AN IDEAL SMART VILLAGE

Serial No.	Ideal Villages Data	Details (Approx. Estimated)
1.	Area	1.5 km square
2.	No. of Houses	1000
3.	Population	4200
4.	Water Resources (Wells, Bores, Hand pumps)	76
5.	Schemes	4 - 5
6.	Water Reservoirs	3
7.	Power Supply (Sub Station)	1
8.	Biogas Plant	19 (Personal/Public)
9.	Education (Schools)	2
10.	Solar Lightened Streets	47
11.	Health & Medicare	3
12.	Co-Operative Society	1
13.	Community Hall	1
14.	Crematorium	1
15.	Bank	1
16.	Police Station	1

Table 2. Approx. estimated requirements of Smart Village

VII. TOWARDS SMART VILLAGE

A. To develop the simple village as a Smart Village by Providing Various Service as Follows

1) Magic pit: Magic pit is covered porous walled chamber that allows water to slowly soak in to the ground. It should be located at safe distance from drinking water source (30m at least). A magic pit should last between 3-5 years without maintenance but after that it needs to clean. For future access, a removable lid should be used to seal the pit until it needs to be maintained.

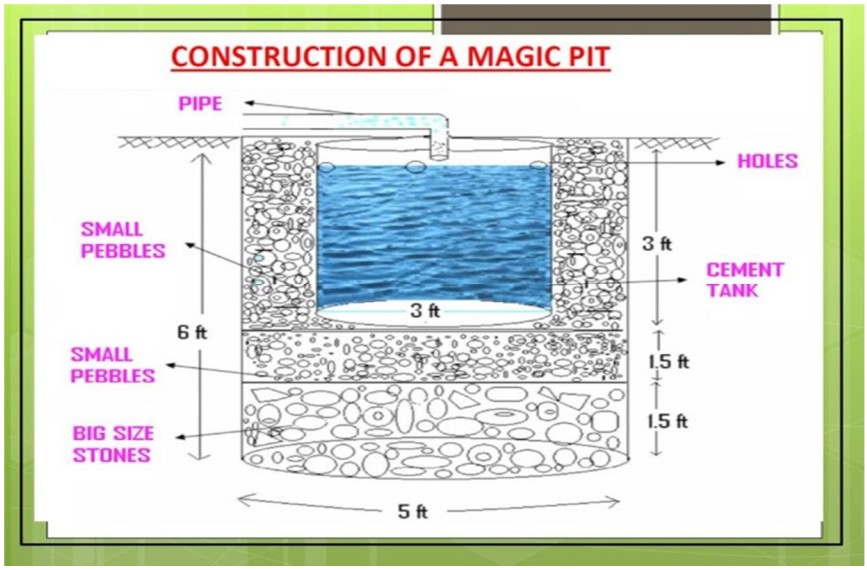

Fig 3. Magic Pit

2) RO plant: Reverse osmosis (RO) is a water purification technology that use semipermeable membrane to remove ions, molecules and larger particles from drinking water. About 60% of disease affecting the rural population are water borne. With RO plant provision of water ATM, is done to solve the problems such as delivery of water using manpower and payment related issue. The cost of 1 litre of may be about 50 paisa.

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Fig 4. Commercial Reverse Osmosis Plant

3) *Rain Water Harvesting:* Rain water harvesting is a technique of collection & storage of rain water in to natural reservoirs and tanks, or the infiltration of surface water in to subsurface aquifers. The rain water harvesting is of different type such as - Directly from roof tops and stored in tanks, Monsoon run off and water in swollen streams during the monsoon and storing it in underground tanks, Water from flooded rivers can be stored in small ponds, Collection and transfer of rain water in to percolation tanks. So as to facilitate discharge in to ground.
4) *Income source:* The main business of people may be agriculture and along with that poultry, business related with dairy products animal, conservation, and nursery.
5) *Agriculture:* Agriculture has a significant role in the socio-economic fabric of India. About 70% people in India depends on agriculture. The history of agriculture in India dates back to Rig-Veda. Today India ranks second worldwide. Now a days the major problem is of scarcity of water. To reduce the wastage and over use of water, use of latest modern techniques like drip irrigation, sprinkler irrigation and so on.
6) *Solar Street light:* Solar Street lights absorbs energy form the sun to provide an alternative source of energy to conventional street lighting. It runs on Zero running cost. No schedule maintenance for up to 5 year. Environment friendly 100% powered by the sun. Solar panels reduce fossil fuel consumption.
7) *Plantation:* A plantation is a large farm which is specialized on farming one type of crop. Plantations grow cash crops, mostly for export, and less for local use. Crops grown on plantation include banana, sugarcane, coffee, tea, cotton and tobacco.

Fig 5. Plantation

8) *Smart healthcare facilities:* Health care or is the maintenance or improvement of health via the prevention, diagnosis, and treatment of disease, illness, injury, and other physical and mental impairments in human beings. Healthcare is delivered by health professionals (providers or practitioners) in allied health fields.
9) *Woman empowerment:* Women's empowerment has become a significant topic of discussion in development and economics. It can also point to the approaches regarding other trivialized genders in a particular political or social context. Women's economic empowerment refers to the ability for women to enjoy their right to control and benefit. Women empowerment and women equality with men" is a universal issue. Women Empowerment refers to increasing and improving the social, economic,

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political and legal strength of the women, to ensure equal-right to women, and to make them confident enough to claim their rights

Fig 6. Various Govt. Schemes for Women Empowerment

10) *CCTV cameras:* With crime increasing and burglaries very common place, it is very important to consider the available security options and choose one that is the best fit for you. One of the most popular and cost effective ways of providing security in the home and place of work is with CCTV cameras and equipment
11) *Wi Fi connection:* Home Wifi internet is made possible via a wireless router, which is basically a box that transmits and receives wireless signals between an internet connection and internet-enabled devices. To communicate with a router and connect to Wifi, a device must have a wireless adaptor.
12) *Road:* A road is a thoroughfare, route, or way on land between two places that has been paved or otherwise improved to allow travel by foot or some form of conveyance, including a motor vehicle, cart, bicycle, or horse. Roads consist of one or two roadways (British English: carriageways), each with one or more lanes

Fig 7. Constructed Road

VIII. ACKNOWLEDGEMENT

We take this opportunity to express our deep sense of gratitude & whole hearted thanks to our Institution Rajarshi Rananjay Sinh Institute of Management & Technology, Amethi for inspiring and encouraging us to explore ourselves. The Incubation Centre of the Institute, Is a beehive of intellectual and innovative activities. Under the effective guidance of our seniors, we have completed the final draft on Smart Village. Our Institute has always focused on providing us a framework for better future for mankind. Also in shaping us to become effective, skilled professionals in coming future. We are very thankful to the Institute's Management & our Director Sir for his kindness, constant encouragement, and influential leadership & for the valuable time which he devoted to us. Also, thanks to our family & friends who directly & indirectly helped, supported & motivated us along the due course of completion of this review paper.

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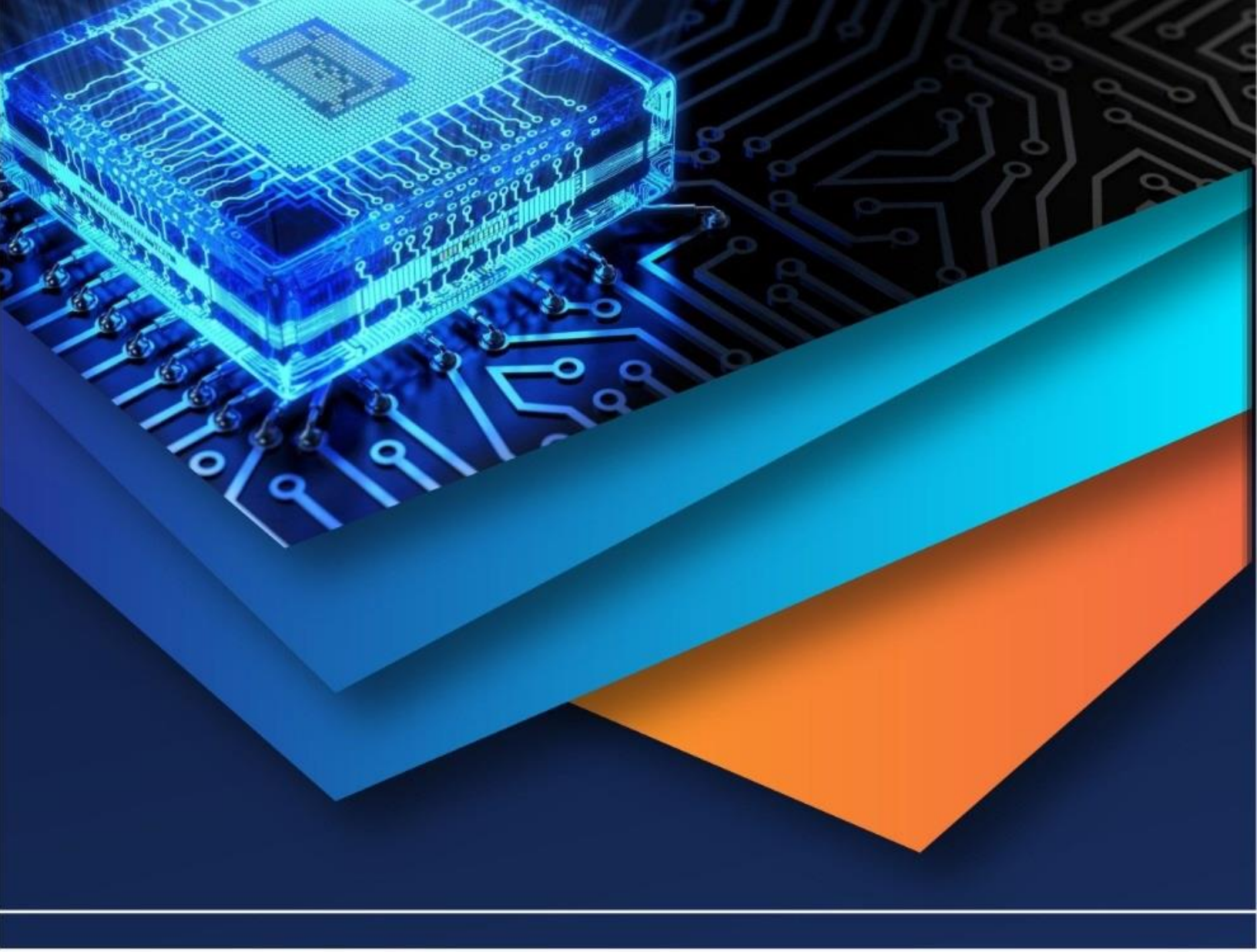

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