Available online at: http://www.ijmtst.com/vol5issue11.html

International Journal for Modern Trends in Science and Technology

ISSN: 2455-3778 :: Volume: 05, Issue No: 11, November 2019

Development of Village into Smart Village

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To Cite this Article

S Sofia, "Development of Village into Smart Village", *International Journal for Modern Trends in Science and Technology*, Vol. 05, Issue 11, November 2019, pp: 128-132.

Article Info

Received on 20-October-2019, Revised on 31-October-2019, Accepted on 04-November-2019, Published on 12-November-2019.

ABSTRACT

This project report deals with study and development of village as a smart village. We define smart village as bundle of services of which are delivered to its residence and business in an effective and effective manner. It can be achieved by developing the system of sanitation, clean water, transportation, education, health and participatory democracy which will help to support further improvement in access to energy. In this project we are going to focus on the parameter like effective public transportation system, improving sanitation condition, solid and liquid waste management., etc.

The main objective is to use of materials in effective way and to assure basic amenities and responsible individual and community behavior to built happy society seeking more benefits. The vision of smart village focus to act as a catalyst to generate more job opportunities and to take smart decisions. Finally we making smart village by taking smart decision using technologies and services.

KEYWORDS: *Smart Village, Infrastructure Development, Rural Development.*

I. INTRODUCTION

In India there are 6,00,000 villages out of them 1,25,000 villages arEbackward so there is a need for designing and building the village as a smart village. So for this I have chosen a village in Kanyakumari district know as Manaviali. With modernization and urbanization people migrate from one place to another place for different facilities such as education, employment and affinity o f people towards the locality or city.

Smart village:

Village is main criteria for development of nation. So, develop the village in such a way that which is self dependant in providing the services, employment and well connected to the rest of the world i.e. smart village. The smart village corrects the social oversight by providing accommodations for sustainable family relationships without disturbing the lifestyle of different generations.

The vision of smart village is that modern energy access can act as catalyst for development in education, health , productive enterprise , clean water , sanitation , environmental sustainability and participatory democracy which helps to support further improvement in access to energy . Initially the concept of development of village is of Mahatma Gandhi i.e. swaraj and suraj village . But, now days it is newly termed as smart village. We know that, India is a developing nation, with the help of smart village we can make India as a SS

nation. Now days, our government also gives strong focus on smart village. Government implements so many schemes on smart village.

Scope and objectives:

In this introduction we can understand that what is basically and how it works. Drawing on thinking behind, and aspirations of smart cities, the smart villages vision offers a unifying framework that is sufficiently flexible to allow for different development pathways for different rural communities, while leading to significantly improved lives for villagers and village communities and contributing to balanced national and international growth.

- To use all the resources in most useful and sustainable way.
- To develop all the villages and finally reach the countries development.

II. SCOPE AND OBJECTIVE

1. Locally produced and locally consumed energy:

In villages if the mountains, hilly area are present then use of solar energy & wind energy then energy is produce in that village itself & use for development of village.

2. 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 fulfills & people not migrate from one place to another.

3. Contribution to global environment: The system can reduce reliance on fossil fuels &contribute to reduction of green house gases such as carbon dioxide .Energy consumption optimization 25-30% average energy saving.

4. For farmer e-learning etc. facility that will be able to ask there quarries online.

5. New technologies in education, e-learning, desktop publishing, horoscope generation of interested person of the village. Transportation of village into comfortable & safe space that enhance quality

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III. LITRATURE REVIEW

The report of David Freshwater (2000), "direct and indirect rural development policy in a neo conservatine north America in this Sustainable development" is generally discussed literature survey aimed to identify the effectiveness of smart village in out developing country. in terms of environmental considerations, but from a rural community perspective, sustainable development must address how the people of the community generate the income to maintain their rural lifestyle. In those instances where employments considered as part of sustainability discussions, it is too often thought of in static terms jobs that will last. But the reality of both modern rural and urban life is that economic conditions rapidly change, and so a discussion of sustainable employment has to be conducted in a dynamic context where different types of employment evolve as economic conditions change. While market signals alone can, in principle, provide the information and the conditions for this type of dynamic process, the argument of the paper is that the nature of rural areas makes it unlikely for markets alone to allow sustainable employment.

An author report of "International journal of research in engg science and technology" written by Zhao zhifeng (2009),The fast urbanization has become already a main characteristic of socio-economic transition in China. This paper points out the characteristics and the problems of villages in Beijing metropolitan region. The paper also explores the role of villages in the metropolitan region in the process of urbanization. As a representative case, the Village System Planning of Changing District in Beijing is presented in this paper. According to the research on the economic and the spatial typologies of villages in Changing District, the villages are classified to three categories in the planning. In conclusion, by the guideline of categorization, the Village System Planning intends to solve those problems of villages under the background of fast urbanization so as to realize the sustainable development of rural area.

The report "Research in engg science and technology" written by Dr. Milind Kulkarni (2010): In India majority of the population still lives in villages. A lot of work needs to be done in making the villages clean. There are different aspects of clean village such as: water supply, sanitation, indoor air quality, solid waste management and renewable energy etc. All these aspects have different alternatives with the associated merits and demerits. In some aspects such as water supply, considerable work is done whereas in some areas like sanitation lot of work is required to be done. We can learn lot of lessons based on success and failure in adopting different alternatives.

In this report of "Service science and engineering research in India", written by N. Viswanadham, SowmyaVedula (2010), In this

paper, we describe the ecosystem for a village and then map out an integrated design procedure for building a smart village. We define a Smart Village as a bundle of services which are delivered to its residents and businesses in an effective and efficient manner. Dozens of services including construction, farming, electricity, heath care, water, retail, manufacturing and logistics are needed in building a smart village. Computing, communication and information technologies play a major role in design, delivery and monitoring of the services. All the techniques and technologies needed to build a smart village are available now and some of them are being used in villages in India but these are disparate, fragmented and piecemeal efforts. We recognize that the need of the hour is-strategy, integrated planning and above all monitoring and execution of the activities using appropriate governance models. Our integrated design is a way forward to deal with the demographic deficit and also achieve the goals of inclusive growth. It is replicable and can be used to design and build smart villages in other parts of the World

In the report of "drivers of national competitiveness "of Townships for Sustainable Cities (2012): Cities of emerging economies are their engines of growth, because if villages cater to agriculture and allied activities, then cities to the industry and service sector. The influx of FDI, expansion of markets, international assistance and aid, globalization, etc. all contribute to the rapid urbanization and simultaneously to the problems associated therewith. With the premature expansion of cities, in the absence of proper planning and preparedness, the challenges and repercussions of this haphazard growth become more evident and serious. The paper deal with the analysis of the problems associated with rapid urbanization, and seeks a possible and practical solution in the form of townships, for such ballooning cities. These townships with "walk to work" concept, built up with public-private-partnership, integrated in nature can be the future of these cities.

In this report of "international journal of research in engg science & technology" written by Haslenda Hashim, Wai Shin Ho, Jeng Shiun Lim, Sandro Macchiato (2013),Integrated biomass solar town concept is a concept which encourages local community to utilize biomass waste comprehensively with strong ties between community and local stakeholders. This paper discusses about an Integrated Biomass Solar Town for eco village with and without load shifting (LS). On the other hand, the energy storage (ES) is also incorporated which could help cut electricity demand during peak periods and smoothing variations in power generation by variable solar power. A substantial technical and economic benefit was achieved through the implementation of integrated (LS) and ES. In this study, LS issued mainly to increase demand during periods of high supply and also shift the load to interval with low demand hence reduce the size of ES significantly. The concept is one of the great initiatives to spur economic growth and environmental protection through energy efficiency improvement and deployment of low-carbon technologies.

The report of this working paper "Integrated biomass and solar town concept for a smart ecovillage in Iskandar Malaysia (2014)",this paper presents a new integrated biomass and solar town concept that can serve as a global model for smart eco-villages in tropical countries. In this research, a renewable energy (RE)-based distributed energy generation (DEG) system for an eco-village driven by the "integrated biomass and solar town" concept was considered in order to optimise RE resource utilization. To design a cost-effective integrated biomass and solar town, a mixed integer linear programming (MILP) model was developed. The proposed model considers actual operation constraints due to biomass availability, weather variation, and restriction of the thermal plant. The application of this new concept on the Iskandar Malaysia (IM) case study with an average daily demand load of 16,900 kWh/d revealed that a 417 kW direct-fired biomass power generator, 412 kW biogas thermal power plant, 136 kW solar photovoltaic (PV) modules, and sodium sulphur battery with an energy capacity of 3046 kWh and power of 1530 kW were required. The annual cost of the integrated biomass and solar town was estimated to be approximately RM 3 million at an electricity cost of RM 0.48/kWh.

In this report "Village-level solar power in Africa: Accelerating access to electricity services through a socio-technical design in Kenya 2014", Village-level solar power supply represents a promising potential for access to electricity services. Increased knowledge is needed for the development of solutions that work for the users and are viable in the long run. This article analyzes a solar power model developed and tested through action research in collaboration between a community in Kenya and a team of social scientists and technical experts. The analysis includes the

reasons for its socio-technical design, and the actual functioning of the model. The research shows that an energy center model can cover basic electricity needs in areas with dispersed settlement patterns, where mini-grid based systems as well as conventional grid extension meet significant challenges.. Close attention to the socio-cultural context and the challenges of users, operators and managers is required. Our research draws on theories of socio-technical change and users' innovation, and presents a fivestep analytical framework for analysis of village-level power provision.

In this report "Solar power energy solutions for Yemeni rural villages and desert communities (2016)", in this paper according to UNDP Policy Note 2014, only 23% of Yemen rural community have access to electricity – having connected to national grid or use small isolated generating units – while the country is one of the richest in solar energy with over 3000 h per year clean blue sky. The objectives of this paper is to concentrate on the utilization and the cost effectiveness of photovoltaic solar energy for electrification of Yemeni rural and desert communities, which will result in enhancing education, culture, science, medical services, and improve the living conditions in rural areas. Otherwise, energy poverty that is a facet of a multidimensional poverty in Yemen will persists because the possibility of connecting rural communities to the national grid, even in the next ten years, is invisible due to major political and financial problems that the country is facing. Moreover, PV energy is environmentally clean and has proved to be one of the best solutions for rural electrification in many countries worldwide due to noticeable drop of PV systems prices with the advance in PV technology. Accordingly, it should be the best solution for rural electrification in Yemeni as well. The paper demonstrates the cost effectiveness and the design procedure of utilization of solar energy for rural and desert communities in Yemen using a number of subsequent cases typical to Yemeni communities and provides also a practical study to support Bedouin backpackers.

IV. CONCLUSION

After applying all this services and technique the overall problems of Manavilai village will be reduced. Due this the cultural, social(Improving the well-being of every individual in society, increase self-sufficiency, reduce the poverty), economical (due to various businesses economical status and standard of living increases), environmental (use of natural resources reduce the pollution and plantation brings the friendly environment), educational (e-learning and other modern techniques increases the level of thinking and personal development) , living standard and overall status of village increases. Because of this the village will become self-dependent and contributes towards the development of nation.

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