Study and development of village as a smart village

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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 businesses in an effective and efficient manner. " Smart Village" is that modern energy access acts as a catalyst for development in education , health, security, productive enterprise, environment that in turns support further improvement in energy access. In this report we focuses on improved resource use efficiency, local self-governance, access to assure basic amenities and responsible individual and community behavior to build happy society. We making smart village by taking smart decisions using smart technologies and services.

Index term – Introduction, concept, services, requirement, benefits, awareness program, information of javalgao village, preparation of report, total cost, photogallery.

1. INTRODUCTION

In India there are 6,00,000 villages out of them 1,25,000 villages are backward so there is a need for designing and building the village as a smart village. 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. 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.

2. LITERATURE REVIEW

Review of Literature on Smart Village

1) David Freshwater (2000):

Sustainable development is generally discussed 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.

2) 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.

3) 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. Keeping in touch with technology clean village projects should integrate technology and digital design, which will make the village not only clean but also smart. The paper discusses all these aspects with reference to Maharashtra and India. This discussion plans to give important inputs and alternatives to policy makers so that they can redirect and reformulate the policy. Engineering students can design and implement projects of clean and smart village which will help in their skill development. At the end paper gives recommendations for effective making of Clean and Smart Village.

4) 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

5) 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 urbanisation 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. They will be self-sufficient, self-managed and self-governed units, with well defined and well designed residential, commercial, retail and recreational areas; self owned and created infrastructure, integrated waste management systems, water resource management systems, and other amenities in place thus reducing the pressure on the local governing bodies and the city resources. Understanding and acknowledging the role and importance of these Townships in development of sustainable cities, the emerging economies have Special Township Policies in order. India is one such country where four states, Maharashtra, Gujarat, Karnataka and Rajasthan, have their own Township Policies. The objective is to create intelligent cities, with smarter plans, better built-environment and happier

6) **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.

7) Integrated biomass and solar town concept for a smart eco-village 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.

8) 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 five-step analytical framework for analysis of village-level power provision.

9) Solar power energy solutions for Yemeni rural villages and desert communities (2016):

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.

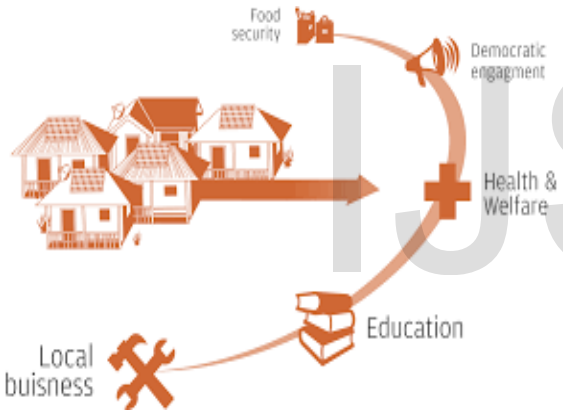
3. CONCEPT

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 smart village project provides, "Global means to the local needs."

The concept of smart village is defined as below,

S	Social, skilled and simple.	Zero tolerance for caste and creed and no discrimination on gender and religion. Skilled simple living and high thinking.
M	Moral, methodical and modern.	Moral values of Mahatma Gandhi and Swami Vivekananda using modern (latest) methods .
A	Aware, adaptive and adjusting.	Awareness about global, social and economic issues adaptive and adjusting the fast changing environment.
R	Responsive and ready	Ready to generate all resources for self - sufficiency and self-governance. Responsive for co-operative movements and collective wisdom.
T	Techno savvy and transparent	Tecnosavy for IT and transparent mobile usage harmonic relations.

4. SERVICES REQUIRED FOR SMART VILLAGE



Services required for smart village,

1. Food security.
2. Democratic engagement - 1. Good governance,
   2. Social development.
3. Health welfare- 1.Environmental development ,
   2. Personal development.
4. Education - Basic knowledge for awareness.
5. Local business - economic development.

5. REQUIREMENT OF SMART VILLAGE

1. Smart security.
2. Efficient public transportation system.
3. Improving sanitation conditions
4. Solid and liquid waste management.
5. Rain harvesting /Rain water drainage system.
6. Safe drinking water facilities.
7. Use of renewable energy.
8. Energy conservation.
9. Grievance redresser.
10. Strengthening CBOs.
11. Functional bank account.
12. Facilities regarding to the agriculture.
13. Latest& affordable medical facilities.
14. E-governance.
15. Use of modern technologies for improvement of locality.
16. Improvement on women empowerment.
17. Educational facilities.

6. BENEFITS

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

7. AWARENESS PROGRAMMSFOR PEOPLE

7.1. GOVERNMENT CONTRIBUTION:

(a) Reorienting education towards sustainable development –

- Education is critical for promoting sustainable development and improving the capacity of the people to address the environment and development issue.
- Basic education provides underpinning for any environment and development education , the latter needs to be incorporated as essential part of learning .
- It is critical for achieving ethical awareness, values and attitudes, skills and behavior consistent with sustainable development and for effective public participations in decision making.
- To achieve the accessibility of environment education , linked to social education from the primary school age through adulthood to all groups of people.

(b) Increasing public awareness –

- Public awareness should be recognized as a process by which human beings and societies can teach their fullest potential.
- Small scale enterprise promotion through social media.
- Education empowerment and access to information through smartphones .
- By making Motivational Videos.

(c) Promoting training programs –

- Government with the help of non-government authorities can arrange various trainings to aware the people .
- Implement various schemes and projects in accordance with policies.
- Training for all age group people.
- With the help of social media, motivational speeches and videos we can give training to the people.

7.2. NGO'S ROLE:

- NGOs play important role in rural development of India. NGOs acts as Planner & Implementers of Developmental Plans and perform a variety's of services & Humanitarian.
- NGOs services focus on assessing individual strength and settling personal goals& encourage overall growth and development.
- NGOs play role in co-ordination, collaboration and bridge he communication between the govt., private sectors.
- NGOs creating awareness among the public active to promote education.Ex.Education of girls .NGOs have important role in bringing about social change and development.
- The projects like construction of Dams, Roads, Highways', railways& important role in religious discrimination.
- The role of NGOs has a very important to protection of environment through social services. NGOs are taking up this job sportingly and successfully.

7.3. PEOPLES ROLE

- Inculcating hygienic behavior and practices.
- Inculcating respect for the cultural heritage.
- Volunteerism: activities for promotion of voluntarism like BhratNirman.
- Reducing risk behavior - alcoholism, smoking, substance abuse.
- Behavioral changes.various programs implemented by grampanchayat,
- Drinking water pipeline is under construction with the help of rashtriy peyjal yojna,
- Mahatma Gandhi national rural employment guarantee scheme – under this jalygovt. scheme is under construction.

8. INFORMATION / DATA AND PHOTOGRAPHS OF JAVALGAON VILLAGE

Sr.No.	Information of village	Details
01	Area	1.5 sq.km
02	No. of houses	1095
03	Population • Men and women = 2550+2346=4896 • Literate = 1919+1379=3298 • 0-6 age = 348+291=639	4896
04	Water supply system(bore wells) • Pipeline work construction under government scheme "Rashtriya Peyjal yojana" • Water supply with the help of bore wells (5 govt., 10 private)	15
05	Schemes implemented by grampanchayat • MG NREG under Jalyukt-shivar yojana	02 dams
06	Reservoirs location • Javalgaon - Pus-Murambi • Javalgaon - Bardapur	02
07	Power supply • From latur • Girwali substation	02
08	Water supply for agriculture • From –wells,borewells,Reservoirs	
09	Dams • Cement dams =5 • Kolhapuribandhra=1 • Matinalas =3	09
10	Biogas plant	15
11	Education facility • 2 schools and 5 anganwadi	07
12	Solar street • Aamdar fund 14 • Samajkalyn 10	24
13	Health facilities • Private =3 • Subcentre =1	04
14	Wear house	01
15	Co-operative society	01
16	Town hall	02
17	Community hall	01
18	Bachatgat • Private =10 • Govt. =5	10
19	Bank = Bank Of Baroda	01
20	Worth ship places • Temple 10 • Mosque=2	
21	Income source • Agriculture • Poultry houses • Animal conservation • Business in dairy products • Nursery	
22	Irrigation system • Sprinkler • Drip irrigation	
23	Main crops • Soya bean crop • Sugarcane	
24	Historical background • Ancient (barav)	
25	Slope	3 direction
26	Major problems • Scarcity of water • Undeveloped roads	

	• No solid waste treatment • Ilitercy • No use of natural resources	

PHOTOGRAPS

8.1 Grampanchyayat Office

8.2 Roads

8.3sewers

8.4WasteDisposal

8.5 Ground Water level

8.6 Water Supply

9. PREPRATION OF REPORT OF SMART VILLADE [SELECTEDVILLAGE]

In this selected village, we see so many problems. To develop this village as a SMART VILLAGE by providing various services we prepare a report are as follows,

9.1 MAGIC PIT OR SOAKPIT:

9.1 Magic Pit

- Magic pit is covered porous walled chamber that allows water slowly soak into the ground.
- Magic pit can offer a cost efficient opportunity for partial treatment of waste-grey or storm water and relatively safe way of discharging it into the environment and therewith recharging groundwater bodies.
- As waste water percolates through the soil from a magic pit, small particles are filtered out by the soil matrix and organics are digested by micro-organisms. Sub-soil layers are water permeable in order to avoid fast saturation.
- Magic pit is best suited for soil having good absorptive properties; clay, hard packed or rocky soil is not appropriate.
- It should be located at safe distance from drinking water source (30m at least). It odourless and not visible because of that it do not cause any problem regarding with health.
- A magic pit should be last between 3-5 years without maintenance but after that it needs to clean.
- When the performance of the magic pit deteriorates, the material inside the magic pit can be excavated and refilled.
- For future access, a removable lid should be used to seal the pit until it needs to be maintained.
- For magic pit Govt. give a fund of 2111/-Rs.

Benefits:

- Can be built and repaired with locally available materials.
- Technique simple to apply for all users.
- Small land area is required.
- Low capital cost; low operating cost.
- Recharging ground water bodies.

➢ For JAVALGAO village,
No. of houses = 1095,
Required no. of magic pit = 1095,
Amount required for magic pit = 2,111 X 1095 = 23, 11,545 Rs.

9.2 SOLID WASTE MANAGEMENT:

- Establish a waste collection, transport and treatment within the panchayat.
- The collected waste should be segregate into bio-degradable and non-biodegradable at each house itself by making two dustbins,
  Green dustbin = bio-degradable waste
  Red dustbin = non-biodegradable waste.
- From bio-degradable waste we can prepare bio-compost and vermin-compost and non-biodegradable is sold to recyclers or sent to the landfills.
- To collect this waste, under Mahatma Gandhi National Rural Employment Guarantee Scheme grampanchayat appoint a team of trained youth called as Friends of nature who do entire operation starting from collection to composting and land fill.
  The no. of friends of nature, 1 for 150 households.
  So, number of friends required for JAVALGAO village,
  No. of houses = 1095
  No. of green friends required = 1095/150 = 6.
- For this management, various tools and equipments are required for daily collection and treatment of waste and the land required to construct treatment plant and capital cost required to construct vermin-compost bed and shed which are obtained under Solid Waste Management Scheme Fund and Mahatma Gandhi National Rural Employment Guarantee Scheme.
- For collection of waste tricycle is required, 1 for 300 households.
- Therefore for JAVALGAO, provide 3 tricycles.
- The payment of Green Friends will be given for first 100 days from Mahatma Gandhi National Rural Employment Guarantee Scheme and next 100 days from Solid Waste Management Scheme Fund.
- After that village panchayat may use its own revenue generated from solid waste management activities and users fees.

- The user fee is Rs-30/month for each household at doorstep with receipt.
- On an average each village panchayat may require 5.5 lakh for solid waste management.

9.3 ROPLANT

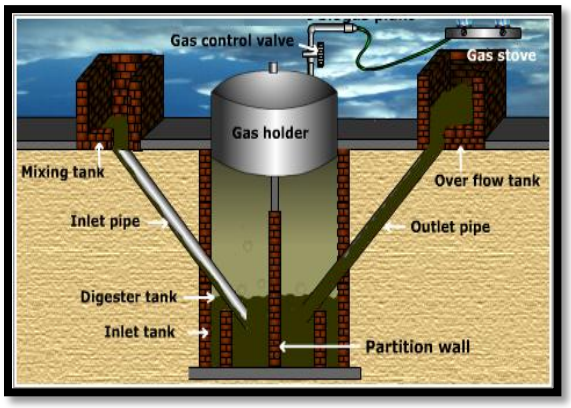
9.2 RO Plant

9.3Water ATM

- **Reverse osmosis (RO)** is a water purification technology that uses semipermeable membrane to remove ions, molecules and larger particles from drinking water.
- About 60% of diseases afflicting the rural population are waterborne.
- So, instead of spending money on medical facilities use clean drinking water. Total population of the JAVALGAO village is near to 5000.
    - In javalgao, there are 1095 families and which carry 20 liter water daily.
- Therefore provide 2 RO plant of capacity 2000 lph having cost of 10 Lakh each and which is implemented under the various scheme of Department Of Rural Development And Panchayat Raj.
- 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 one liter of water is 50 paise.
- The total cost required for Ro plant is 20 lakh and for water atm and installation cost of 10 Lakh is required.

9.4 BIOGAS PLANT:

- Biogas is a mixture of different gases produced by the breakdown of organic matter in the absence of oxygen.
- Biogas can be produced from raw materials such as agricultural waste, manure, municipal waste, plant material, sewage green waste or food waste.



(9.4) Biogas plant

9.4.1 Biogas production for each house-

- The biogas plant is made of F.R.P. Material which is resistant to water, sunlight and electricity, if it is take care of well, can be used for up to 25 years.
- Everyday 10 kg cow dung along with 15 liters of water is put in the mixing tank.
- The cow dung is brought from cowsheds from nearby areas, where owners want to dispose it anyway.
- The mixture is fermented inside the fermentation tank by the anaerobic bacteria.
- The mixture is then converted into slurry through which methane gas and co2 gas are released. They also put kitchen waste into the tank for producing biogas which used for cooking.
- The amount of biogas produced can be used for feeding 4-5 members of the family and 10-15kg manure is released from the plant everyday which is utilized in their backyard.
- The initial cost for setting up a biogas plant is somewhere between Rs.25000 and one can recover the cost by saving one.
    - Total no. of houses=1095
    - Existing no. of houses containing biogas plant = 15
    - Provide, for 80 houses individual biogas plant = 80
    - And for remaining 1000 houses = 1 biogas plant for 2 houses = 500
    - Therefore total no. biogas plant = 580
    - Amount required for construction of 1 biogas plant = 25,000 Rs
    - For 580 biogas = 580 X 25000 = 1, 45, 00,000 Rs.
- Government gives subsidy for biogas, For general category = 9,000 Rs
- For scheduled cast/category = 11,000 Rs
- The biogas production is best way to use natural recourses which is non polluting and also use for making organic manure because of that we can use it in agriculture to reduce the harmful effects of chemical and pesticides.
- The biogas is used not only or cooking but also used as electrical purpose by converting the gas into electricity in invertors.
- It is a cheaper technology, helps to reduce the greenhouse gases and also helps to reduce waste generated.

9.5 RAINWATER HARVESTING:-

- Rainwater Harvesting is a technique of collection and storage of rainwater into natural reservoirs and tanks, or the infiltration of surface water into subsurface aquifers. The rainwater harvesting is of different types such as,
  1. Directly from roof tops and stored in tanks,
  2. Monsoon runoff and water in swollen streams during the monsoon and storing it in underground tanks,
  3. Water from flooded rivers can be stored in small ponds,
  4. Collection and transfer of rainwater into percolation tanks. So as to facilitate discharge into ground.

(a) Roof rainwater

(b) Ground water recharge

(c) Surface rainwater

9.5 Rain water harvesting

- But for village we use roof rainwater harvesting for houses.
- With rooftop harvesting, most any surface – tiles, metal sheets, plastic but not grass or palm leaf can be used to intercepts the flow of rainwater and provide a clean water and year-round storage. Other uses include water for gardens, irrigation of annual crops pastures and trees, domestic and livestock consumption, ground water recharge.
- The rainwater harvesting is mandatory to all in village.
- The reasons for using rainwater harvesting systems answer three questions:
  What: rainwater harvesting will improve water supply, food production, and ultimately food security.
  Who: Water insecure household or individuals in rural areas ill benefit the most from rainwater harvesting system.
  How: Since rainwater harvesting leads to water supply which food security, this will greatly contribute to income generation.

Advantages:

1. Rainwater harvesting provides a good supplement to other water sources .Thus relieving pressure on other water sources.
2. It can be as a buffer and can be used in times of emergency or breakdown of public water supply systems.
3. Helps to reduce the storm drainage load and flooding in the cities.
4. It is a flexible technology and can be built to require meets of any range .Also the construction, operation and maintenance is not very labour intensive in most systems.
5. Prevents water wastage by arresting soil erosion and mitigates flood.
6. Sustains and safeguards existing water table through recharge.
7. Arrests sea water intrusion and prevents salination of ground water.

9.6 INCOME SOURCE:

The main business of people in javalgao village is agriculture and along with that poultry, business related with dairy products, animal conservation, nursery.

Agriculture:

- Agriculture has a significant role in the socioeconomic fabric of India. About 70% people in India do the agriculture.
- The history of agriculture in India dates back to the Rug-Veda. Today India ranks second worldwide.
- Now a day the major problem is of scarcity of water and it is same in our selected village.
- To avoid this problem, avoid the production of crops which require more quantity of water like sugarcane, banana etc. while taking crops first check the quality of soil and according to that take crops which are suitable.
- To reduce the wastage and overuse of water use latest modern techniques like drip irrigation, sprinkler irrigation and so on.
- As a main business government launches so many schemes which help to reduce stress and pressure generated in farmers mind because of today's condition.
- The schemes are,
  1. Soil health card scheme.
  2. National agricultural development program to promote use of organic farming.
  3. Fertilizer subsidy.
  4. Bank loans, free electricity.
  5. Gram Swaraj Abhiyan.
     Saksham Kisan, samriddh Bharat.
  6. Pradhan Mantri Fesal Bima Yojna (PMFBY).
  7. Crop intensification such as SRI
  8. Micro-irrigation, Agro-service center
  9. Setting up seed banks

Now a day's government started a new scheme to provide insurance cover to production, productivity and farmers income. The recent initiative in agriculture,

1. Mobile apps Kisan suvidha and pusa Krishi launched.
2. Launch of the mobile apps"AgriMarket & crop insurance".
3. Convergence between agriculture research & extension.
4. Provision of kisan mandi to avoide unwanted things in marketing sector.

In agriculture use organic farming with modern techniques and equipments to reduce the time of work and increase the productivity or yield.

Best low cost small business ideas in agriculture,

1. Cultivation of food and cash crops
2. Flowers, medicinal herbs and gardening
3. Production and formulation of livestock feeds
4. Cultivation of mushroom
5. Marketing of fresh fruits
6. Retailing of food stuff
7. Fish farming
8. Snail farming
9. Source for agro-raw materials for urban manufacturing companies
10. Keeping bee for honey production
11. Start connecting rural farmers with exporters using internet
12. Production of fruit juice and jams
13. Sales and maintenance of farm equipment
14. Produce baskets, brooms, cane chairs, ropes etc.
15. Dairy products.
16. Post-harvest technology applications
17. Micro-enterprises
18. Traditional industries
19. Skill development of all eligible youth for self-employment and placement
20. Village Tourism including eco-tourism

With agriculture we do this kind of businesses which helps to improve economy.

9.7 SOLAR STREET LIGHT:

solar street lights harness energy from the sun to provide an alternative source of energy to conventional street lighting.

Benefits:

1. Zero running cost.
2. Guarantied working in rainy weather.
3. No schedule maintenance for up to 5 years.
4. Environment friendly 100% powered by the sun.
5. Solar panels reduce fossil fuel consumption

9.6 Solar street light

.**Dimension**

L=34.5cm, B=17cm, Wt =2.5kg, pole ht=10Ft,
Position = underground.
All India courier cost for the street light = 3000 Rs.

24 streetlights are existing which are obtained from Samajkalyan and Aamdar fund
In Javalgaon village we provide 10 street lights,
Total cost =10 X 3000= 30000 Rs.
Government provide 30% subsidy of total project cost.

9.8 SOLAR PANNELS:

9.7 Solar panels

- Supply of electricity is quite unreliable in most part of India.
- Due to increased scheduled and un-scheduled power cuts in most of the cities in India, interest in using electricity generated through alternate sources has also increased.
- Therefore use of renewable energy is become the need. Solar panels designed to absorb sunrays as asource of energy for generating electricity. Some solar panels have efficiency exceeding 19%.
- Government launched a scheme javaharlal Nehru national solar mission in 2010. As a part of this mission the government has initiated a subsidy scheme to help the individual and organization. Initially the subsidy was 30% but now it is modified to 40% on the capital cost of solar system for rural and urban areas.
- For javalgao village we provide solar panels on the reservoir.
- Provisions of 15 KW electricity generations for those 60 solar panels are required.
- The amount required for that 16,50,000 Rs.

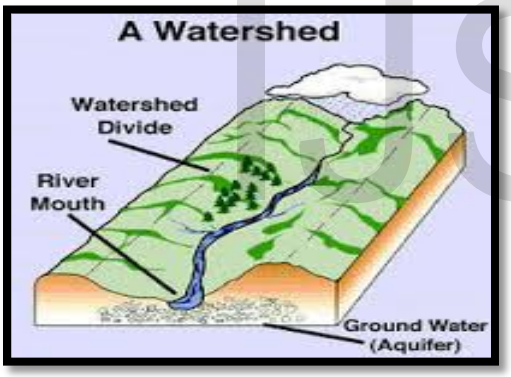
9.9 PLANTAION:

- Tree plantation creates instant forests, we do this by growing tall tree seedlings in the shortest time possible .for this we provide fast growing trees fruit trees, nut trees etc.
- In dry tropical areas where rainfall is low ,grasses for seeding animal are seasonally scare and low in quality feeder tree plantation contain import feed items (nutrients) that grasses sometimes do not have.
- In village roadside plantation is carried out and where the space is empty we can plant tree which helps to make environment friendly i.e. eco-environment.

9.8 Plantation

9.10WATERSHADE MANAEMENT:

- Watershed development refers to a set of measures that help retain water within a watershed. These include soil and water conservation, a forestation, grasslands development and protection of biomass.
- Water management means properly organizing the hydrosphere in order to prevent major water crisis in future.
- The main goal of Watershed Management is to implant the sustainable management of natural resources to improve the quality of living for the population.



9.9 Watershed management

Important aspects of water management include:

- Hydrosphere
- Hydrological cycle
- Exchange of water
- Transportation of water and irrigation.

Techniques for Water and Soil Conservation:

1. Earthen bunds: Reduction in soil erosion: The ground water table of wells within 1 to2 km on downstream side of bund increases. The submerged material that has been flown off catchment area can be used as fertilizer. (fig.a)

2. Continuous Contour Trenches: Reduces surface water flow velocity, promotes in filtration, and prevents pollutantsfrom draining into water bodies. (fig.b)

3.Farm Ponds: Ponds constructed on the upper side of t he farms t o block and store t he runoff rainwater which ca n be used during emergencies a re called farm ponds. The main objective of farm pond is to store the water from the surface runoff in the ponds and use for the irrigation purpose. The water stored in the farm ponds is general ly used when irregular rains a received. Places where construction of wells are not possible in such areas, the farm ponds are constructed. (fig.c)

(a)

(b)

(c)

9.10 Techniques of watershed management

9.11 EDUCATION:

- The current schemes for universalisation of education for all are the Surva shiksha Abhiyan.
- This is the one of the largest education initiatives in the world.
- In India education system a significant no. of seats are reserved for under the affirmative scheduled castes & scheduled tribes & other backward classes.
- Free and compulsory education is provided as a fundamental right to children between ages of 6&14. The central & most state boards uniformly follow the "10+2+3" pattern of education. In this pattern, stady of 12yrs is done in school or in college and 3 yrs of graduation for a bachelor's degree. The first 10 yrs is further subdivided into 5 yrs of primary education, 3 yrs of upper primary, followed by 2yrs of high school.
- The education of women plays a significant role in improving living standards in the country.
- A higher women literacy rate improves the quality of life both at home and outside the home, by encouraging & promoting education of children.
- By providing various facilities with latest modern technologies like e-learning helps to increase the knowledge of children.
- In school the various activities are carried out to improve the skills of children and they can move forward in their life to become a good person of the society.
- Government plays important role in that by providing various schemes such as,
    1. Giving the scholarship to the scheduled castes or scheduled tribes, backward class students.
    2. Arranging the programmes like Surva shiksha abhiyan.80%of all recognized school at the elementary stage is government run.
    3. The Indian government also banned child labour in order to ensure that the children do not enter unsafe working conditions.
    4. Mid Day Meal Scheme.
    5. Integrated Child Development Scheme (ICDS).
    6. Annapurna Scheme (Ministry of Rural Development) for senior citizens.
    7. The Nutritional Program for Adolescent Girls.
    8. Emergency feeding program.

For college-

The college is situated in a sprawling campus. The campus divided in parts for different departments. If has old and new building consisting sufficient class rooms. College has been utilizing IT infrastructure such as computers and networking for speedy effective delivery of academic and administrative services. The various facilities required for college,

1. Library-biggest libraries available in the college.
2. Hostel- hostel accommodation is available for boys and girls separately.
3. E-class rooms-to encourage application of information and communication technology (ICT), 8 LCD projectors for e teaching.
4. Seminar hall-the college has an air conditioned seminar.
5. Proving Wi-Fi connection which improves the excitement of children towards knowledge.

9.12 SMART HEALTHCARE FACILITIES:

- Promoting health literacy the eWay providing authenticated, validated customised health information to a pre-defined population through smart phones etc. If public WiFi is available this could be exploited.
- Telemedicine enabled pre-hospital management in smart ambulances for emergencies, trauma etc
  Remote health monitoring at home that reduces hospital bed occupancy by converting a home into a health care ward using technology.
- Scientific, statistical evaluation of health care outcomes, incidence prevalence, follow up etc. will for the first time be feasible
- Health' is an inherent and major component, which must always be taken into account while planning a smart city or smart village. Whether it be pollution, the metro or even water or transportation management, inputs of a clinician who is familiar with technology and its implications and most importantly the behavioral response to use / imposition of technology needs to be considered.
- In the past, health has always been an afterthought, retrofitting being the order of the day we have never ever been future ready – with the imminent construction of smart communities, this is once in a life time opportunity.
- Most importantly 24/7 availability of EMR will considerably reduce duplication of investigations. Immediate access to entire past and present medical history to authorized personnel will produce incremental changes in quality of health care delivery.
- With the help of latest modern technologies like e-healthcare, laser technique we can diagnosis the person any ware.

9.13 WOMEN EMPOWERMENT:

- The women play a significant role in development of country.
- A higher women literacy rate improves the quality of life both at home and outside the home, by encouraging & promoting education of children.
- When women have economic empowerment, it is a way for others to see them as equal members of society.
- Through this they achieve more self-respect and confidence by their contribution to their communities and help to increase the economy of the country.
- In javalgao village, there are some self-help groups started by women which help to increase their image in society.
- Government implements so many schemes for women empowerment,
    1. Beti bachao beti padhao scheme
    2. Indira Gandhi matritva sahyog yojna(IMGSY)
    3. Rajiv Gandhi national crèche scheme for the children of working mother
    4. One stop center scheme
    5. Women helpline scheme
    6. Ujjawala – a comprehensive scheme for prevention of trafficking and reuse, rehabilitation and reintegration of victims of trafficking and commercial sexual exploitation.
    7. Swadhar greh
    8. Support to training and employment programme for women (STEP)
    9. Stri shakti puraskar

9.14 GOOD GOVERNANCE:

- Strengthing of local democracy through strong and accountable and gramactive and gramsabhas
- E-Governance resulting in better service delivery
- Provision of UIDAI cards to all
- Ensuring regular and punctual attendance of government and panchayat staff
- Time bound services and delivery in line with departments citizens Charters

- Holding of manila gramsabhas before every gramsabhas
- Holding of gramsabhas at least 4 times a year
- Holding of balsabhas every quarter
- Institutionalizations of regular open platforms for arising grievances and their redressed
- It is equally important to have participatory local development plan to translate the aforesaid activities into possible actions by using appropriate tools.
- If anyone has some problem related with local administration then he/she can dial the toll free no. set up by gramsabha and his problem is solved during gramsabha.

9.15 MINIBUS:

A minibus of 35 seats having ticket of 1 Rs to use this bus. For female students bus service is free. For this bus 100% funding is from District Rural Development Agency (DRDA). Cost of running this service is managed through ticket sales. The price of this minibus is approximately up to 13, 50,000 Rs.

9.15 Minibus

9.15 LOUDSPEAKERS:

Provision of 50 loudspeakers covering each corner of the village. Important annousments like holding of gramsabhas, tax payment , electricity bills, telephone bills and other important annousments as per need and condition. The villagers also listen to prabhatiya in the morning and bhajans, prayers. To set up this system approximately 1, 20,000 Rs. required and were spent from corpus fund.

9.16 CCTV CAMERAS:

9.16 CCTV camera

CCTV cameras are installed in the school and colleges. 25 cameras are installed at a prime junction of the village so that the litterbugs can be spotted and punished. Approximately the money required for installation of cameras 70,000 Rs.

9.17 WI-FI CONNECTION:

9.17 WiFi

Free wifi is provided for the village. After consuming 100 MB data the connection will be terminates and user can re-login after a 10 minute gap. The amount required for installation of wifi is approximately 4 Lakh.

9.18 ROAD:

In javalgaon village we can provide two types of roads, Cement concrete road or Paver block road

- Cement concrete road:

Problems due to the dust and wet weather damage to the road using innovative technology at a low cost. For 1 KM cement concrete road the required cost is 20 lakh.

- Paver block road:

Paver block road is used to improve drainage facilities. It is easy for construction and time required for construction is much less than cement concrete road. For 1 KM of paver block road the amount required for construction is 12 Lakh.

Therefore the paver block road is economical than cement concrete road and it is suitable.

According to us the total cost required for development of Javalgao village as a smart village is 2, 51,81,545 Rs. hence approximately 2.5 to 3 crore required.

(a) paver block road

(b) cement concrete road

(11)

Roads

10. OVERALL COST

Sr. No.	Title	Required Cost
1	Magic Pit	23,11,545.00
2	Solid Waste management	5,50,000.00
3	RO Plant & Water Treatment	30,00,000.00
4	Biogas Plant	1,45,00,000.00
5	Solar Street light	30,000.00
6	Solar Panel	16,50,000.00
7	Minibus	13,50,000.00
8	Loudspeakers	1,20,000.00
9	CC-TV Cameras	70,000.00
10	Wi-Fi Connection	4,00,000.00
11	Roads	12,00,000.00
	Total	s 2, 51,81,545.00

11. RESULT

After applying all this services and technique the overall problems of Javalgao village are 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 that village become self-dependent and contributes towards the development of nation.

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12. PHOTOGALLERY


पुरस्कार
हिवरे बाजार
ता.जि.अहमदनगर, महाराष्ट्र
AWARD'S
आदर्श ग्राम १९९५ (महाराष्ट्र शासन)
IDEAL VILLAGE 1995 (GOVT OF MH.)
यशवंत ग्राम २००० (महाराष्ट्र शासन)
YASHAWANT GRAM 2000 (GOVT OF MH.)
निर्मल ग्राम २००७ (भारत सरकार)
NIRMAL GRAM 2007 (GOVT OF INDIA)
वनग्राम २००७ (महाराष्ट्र शासन)
VAN GRAM 2007 (GOVT OF MH.)
राष्ट्रीय जल पुरस्कार २००७ (भारत सरकार)
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