RJSMS LECTURE ON STRATEGIES FOR SMART VILLAGES.


Services required for smart village:


REQUIREMENT OF SMART VILLAGE:

**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
prehension of interested person of the village. Transportation of village into comfortable & safe space that enhance quality.

**PREPRATION OF REPORT OF SMART VILLAGE**

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 biodegradable 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.

• Reverse osmosis (RO):

It 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. o 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 RugVeda. 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
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. Guaranntied 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 a source of energy for generating electricity. Some solar panels have efficiency exceeding 19%. • Government launched a scheme jawaharlal 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.

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 to 2 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 pollutants from draining into water bodies. (fig.b) 3. Farm Ponds: Ponds constructed on the upper side of the farms to block and store the runoff rainwater which can be used during emergencies are 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 generally used when irregular rains are 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, study 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 2 yrs 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 ehealthcare, 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
• Strengthening 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 announcements like holding of gramsabhas, tax payment, electricity bills, telephone bills and other important
announcements 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.

**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
The 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

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<th>Sr. No.</th>
<th>Title</th>
<th>Required Cost</th>
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<tr>
<td>1</td>
<td>Magic Pit</td>
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<tr>
<td>2</td>
<td>Solid Waste management</td>
<td>5,50,000.00</td>
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<tr>
<td>3</td>
<td>RO Plant &amp; Water Treatment</td>
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<td>Biogas Plant</td>
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<td>Solar Street light</td>
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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.

12. REFERENCES
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2) Dr. Milind kulkarni 2010, International journal of research in engg science & technology.