



# SMART VILLAGES AND SMART CITIES: A SUSTAINABLE NEED OF EMERGING INDIA: CASE STUDY ANALYSIS

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## **ABSTRACT**

In every developing country there are a lot of problems that are faced specially by the rural areas in terms of poverty, lack of availability of technology, scarce resources and standard of living. So, therefore government has tried its ways and means to bring in the concept of smart villages that can be a new beginning. Smart villages are a concept through which possible sustainable solutions are taken up to improve the quality life of people. This concept of Smart villages was launched on 11<sup>th</sup> October 2014 as Sansad Adarsh Gram Yojana (SAGY) under the leadership of Mr. Narendra Modi on the mark of Mahatma Gandhi's concept of Ideal villages. In the year 2014 SAGY was launched with the motive to develop rural areas with the same pace of urban areas. So, therefore under this concept every member of parliament had to choose their own representative to fix parameters with the motive to make "Model Village" or "Adarsh Gram" by 2016. With the help of SAGY guidelines every member of parliament should work in such a way that the institutional infrastructure is converted into "Model Villages" or "Adarsh Grams". This was the concept for the development of rural areas, but as time passed by. SDG's guidelines came into existence. This concept Sustainable Development Goals (SDG's) agenda 2030 was eventually launched in 2015. There is total 17 SDG's goals, one of them mainly focuses on Sustainable Cities and Communities that is SDG 11. So, with this concept under the leadership of MR. Narendra Modi the government of India launched the smart city project on 25 June 2015, With the ambition of creating sustainable environment with smarter solutions, smart cities become the most heated and talked about concept in India. On one hand it has a lot of consequences and is challenging to citizens and on other hand the government of India is trying its efforts best to make people aware and acceptable to this concept. This paper mainly focuses on needs of smart cities and smart villages for sustainable future with the help of case study analysis. Also, to understand how Information Communication Technology (ICT) has played a major factor moving towards green environment making India Sustainable.

**KEY WORDS:** Sustainability, Smart city, smart villages, Green Environment, Information Communication Technology (ICT)

## INTRODUCTION

Rapid urbanization due to expansion of markets and influx of FDI contributes to premature expansion of cities. The problems associated with such expansions requires proper analysis and practical solutions and to deal with its researcher's introduces the concept of "walk to work" which solely focuses on understanding and acknowledging the role such townships in development of sustainable cities. Not only smart cities, the focus on making a village smart and equipped with all basic amenities plays a vital role in development of sustainable townships. The advancement in technologies is tripling with time and technologies such as Geo spatial dashboards which basically works on remote sensors helps in sensing or identifying basic infrastructure, therefore ensuring all round development at micro level. The design includes dozens of services which includes farming, health care, retail, construction, manufacturing, water and logistics which are delivered to village residents and business man in an effective and organised manner. The focus in on integrating technology with design in such a way that will not only make a village smart however works on basic sanitation infrastructure to make it healthy for living.

## JOURNEY TOWARDS SUSTAINABILITY

Villages are considered as the backbone of India and plays a vital role in the Indian Economy. Recently, we have been observing that the concept of Smart Village is adapted by many villages in order to prove their livelihoods. This concept aims to support self-reliant and thriving villages for future generation. Smart Village is the combination of Ideal Village and Digital Village. Therefore, a village comprising basic facilities such as roads, hospitals, electricity, water and schools is considered as ideal Village and transforming such village digitally with better IT infrastructure turns out to be a smart village. We are indeed thankful to the government of India for launching the Sansad Adarsh Gram Yojana (SAANJHI) on 11<sup>th</sup> October 2014, this Adarsh Gram yojana takes the vision of smart village once step ahead.

As we know world's half of humanity -3.5 billion people-lives in cities today and by 2030 it is estimated that six out of 10 people will be city dwellers. The world's cities occupy just 3% of the planets land, but account for 60-80% of all energy consumption and 75% of planets carbon emissions. Close to 95% of urban expansion in coming decades will take place in developing world. The rapid urbanisation is exerting pressure on fresh water supplies, sewage, the living environment and public health. Our rapidly growing urban world is experiencing congestion, a lack of basic services, a shortage of adequate housing and declining infrastructure. 30% of the world's urban population lives in slums. The world introduces the concept of SDG 11 which refers to human settlements, increased urbanisation and importance of cities. Cities are important as they provide Density, interaction and networks that makes us more productive and creative. They are the key of bringing together people, jobs and all the inputs required for economic growth. Therefore, the concept is divided into two key areas:

**First**, the growth and roll out of smart city concept and **Second**, the importance of systems in achieving SDG 11. SDG 11 comprises of stakeholders such as urban planners, architects, property developers, construction industry, all levels of governments, citizens and other identified groups by UN.

The target is to provide safe and affordable housing, sustainable transport systems, human settlement planning, safeguarding cultural heritage, preparedness for natural disaster and to monitor the environment in terms of air quality and waste management. These stated targets strengthen the institutions and structure for effective outcomes. With the rise in technologies such as Internet of Things (IoT) we have observed massive trends in sustainable cities. Without any doubt it can be stated that the upcoming future everything in a city will be interconnected to everything from an electricity grid to the sewer pipes to roads, buildings and vehicles. This interconnected network uses electronic data collection sensors to supply information which can be effectively used further to manage assets and resources efficiently. We can consider cities like Barcelona where a new bus network based on data analytics allows buses to run routes with most green lights. So, In Stockholm the green IT programs seek to reduce environmental impact through IT function such as energy efficient buildings (thus minimising health costs), traffic monitoring (thus minimising the time spent on road) and development of e-services, which minimize paper usages.

An alternative use of smart city technology can be found in Santa Cruz, California where local authority analyses historical crime data in order to predict police requirements and maximise police presence where it is required. So, it's important to remember the challenge of sustainable cities is not simply about developing new technological solutions to long standing problems. Rather the success in the sphere will be achieved only by balancing the demands of social and economic development, with careful environmental management and innovative urban governance. As concluded SDG 11 has a potential for interlinkages and real system approach. For Example; the natural disasters and other climate impacts are endogenous to development, they are not a separate issue to be considered independently, thus bringing together SDG 11 and SDG 13 or effective inclusive development in cities will need to take into account the needs of people with disabilities and another vulnerable groups.

## **WHAT IS SMART CITY?**

The government launched the concept of smart city in India on 25 June 2015. It is one of the most ambitious plans by our prime minister for revalorising India. The aim of this smart city project is to upgrade 100 cities and to make India a better place in terms of economic growth and development. It was predicted that due to this project there might be an increase of 10-15% in job openings. The project comes with the tagline "smarter solutions for a better tomorrow" depicting the concept of smart city. A smart city is also known as an efficient city with advanced technology which is developed in order to solve various socio- economic problems. It is a city that provides a decent quality of life with clean and sustainable environment, through application of smart solutions. For example, traffic management system, smart parking, green building, efficient energy, upgrade technology, smart connectivity etc.

The below mentioned are the requirements for being smart:

- **Population Stability**
- **Environmental Conditions**
  - Green space
  - Stable air and water quality/pollution
  - Cleanliness
- **Smart governance**
- **Smart transportation/connectivity**
- **Advanced technology**
- **Standard living of people**
  - Education
  - Health care
  - Perception of people

Now, let's try to understand how the above requirements if clubbed together produces an end result by taking Singapore, existing Smart city as an ideal model.

## **SINGAPORE**

Singapore poised to continue the most developed smart city within the Southeast Asian region with 90% population well connected through smart devices supporting innovating development in the country. Firstly, in 1998 by the introduction of **ERP (ELECTRIC ROAD PRICING)** System, which used to scan cars and used to charge fees to the drivers based on time. Singapore has reached its first phase of development and now is working on the use of driverless cars which will totally transform the environment, making transportation more efficient and sociable. It shows how innovative Singapore is in the field of transportation. By having efficient traffic management system, moderate level of pollution and stable population level, high literacy rate and so on. It depicts how Singapore has taken steps towards becoming a smart city with advanced technology. But this doesn't stop the research further, government is still conducting various experiments in several innovation labs to attract investors and founders alike to Singapore's vibrant ecosystem, thus bridging the gap between innovation and enterprise. Singapore has set an excellent within the smart city network. The most important three pillars that are followed by Singapore are as follows:

**Digital economy:** In order to make Singapore vibrant and competitive in nature, digitalisation plays an important role by attracting more talents and businesses by making the country to be in the position of strength.

**Digital Government:** On 5 June 2018, strategies were made to launch the digital government blue prints in order to have an access of progression towards digitalisation. New initiatives were taken up for capacity building, and usage of technology and digital tools the country safe.

**Digital Society:** Digital inclusion makes sure that the population is getting access to the technology been developed for day to day lives by equipping them with skills necessary for bringing in usage of technology in a safer environment

So, in order to do so they came up with digital readiness blueprint.

So, basically based on the real impact of sustainable development goals in rural area, smart village includes technological development which enables in achieving the multiple sustainable goals. For instances SDGs goal for health care, commerce, education and agriculture making it in a right way to reach to the common People. Smart villages consist of a common integrated SDG platform that provides reusable ICT building blocks to bring in different Integrated digital solutions emphasised mainly on highly prioritize areas addressing the user and country's need. Digital services can be provided in health care, agriculture, finance, commerce, and education.

Through a technology development and integrated development model, smart village which is also known as multi stakeholder which uses cross sectional initiatives to bring in cost effective methods to implement these sustainable goals especially in remote areas.

## **OBJECTIVES**

- 1) To identify and analyze the importance of concept of Smart Villages and Cities by making India Sustainable for future generation
- 2) To understand and comprehend the requirements of Smart villages and Smart Cities with the help of case study analysis
- 3) To understand how Information Communication Technology (ICT) has played a major factor moving towards green environment making India Sustainable with the help of case study analysis.

## **RESEARCH METHODOLOGY:**

This paper is fully based on Secondary data analysis by focusing on 3 main broad case studies: Case study of Punsari village, case study of Dholera (green field smart city), case study of Varanasi (brown field smart city). So, these case studies show how India makes a transition from the concept ideal Smart village to Smart cities, moving towards sustainable development goals for Smart future.

## **CASE STUDY ANALYSIS**

### **CASE STUDY: PUNSARI VILLAGE GUJARAT: INDIA'S FIRST SMART VILLAGE**

Villages are considered as the backbone of India and plays a vital role in the Indian Economy. Recently, we have been observing that the concept of Smart Village is adapted by many villages in order to prove their livelihoods. This concept aims to support self-reliant and thriving villages for future generation. Smart Village is the combination of Ideal Village and Digital Village. Therefore, a village comprising basic facilities such as roads, hospitals, electricity, water and schools is considered as ideal Village and transforming such village digitally with better IT infrastructure turns out to be a smart village. We are indeed thankful to the government of India for launching the Sansad Adarsh Gram Yojana (SAANJHI) on 11<sup>th</sup> October 2014, this Adarsh Gram yojana takes the vision of smart village once step a ahead and present us with village like Punsari in Gujarat as India's first Smart Village. This village comprises of facility like Wi-fi, 24x7 power, security cameras etc.





## Punsari Village Gate

**District:** SabarKantha

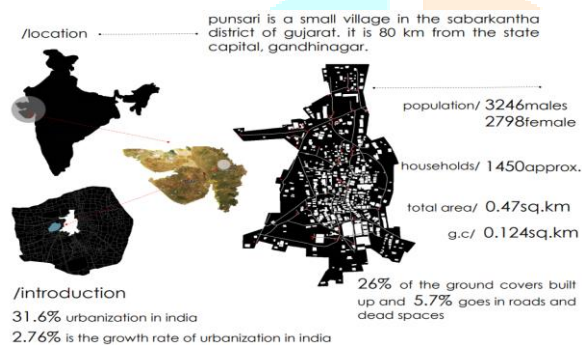
**State:** Gujarat

**Language:** Gujarati and Hindi

**Pin Code:** 383335

**Post Office Name:** Gabat

Punsari is in the Saba kantha District of Gujarat with population nearly to 6000. The village follows the Panchayati Raj System and has left many town and cities behind for facilities like purified drinking water, drainage systems, electricity, waste management and Wi-Fi in every household.



This all started in 2006 when Himanshu Patel, a 23-year-old was elected as the Sarpanch of the village and put all his efforts and dedication towards transforming this village into a modern model within his tenure 2006-2014. Himanshu started off with tackling the necessities of the villagers and started with a Mineral water plant within the village. When the plant got started, each household was supplied with water through small vehicles. Himanshu even started supplying water to the nearby villages to earn revenue. With extra revenue in hand, he recruited more people working towards the modernization. Several new technologies were introduced in the village with time. CCTV cameras were installed all over the village and inside the schools for safety perspective. The village panchayat was fully computerized. Air-conditioned classrooms and computer labs became common in every government institution. Punsari has totally 5 well equipped schools including 2 Primary with all the facilities and amenities. As a result, more and more admissions were reported. Apart from education, facilities such as setting up LED streetlights across the village has not only added to the beauty of the village but has also helped in reducing the electricity bill from Rs. 55k to Rs. 22k.

As per the reports, Punsari has its own developed transportation services named Atal Seva to connect every part inside and to the nearby areas of Punsari. Th next step was towards the cleanliness and drainage system. Before 2006, the village had no drainage and waste management system but with Himanshu's (Sarpanch of the village) efforts and funds from the government, a proper drainage system was built throughout the village which includes toilets in every household. Under the Swachh Bharat Abhiyan, waste management facilities were upgraded, and workers go from house to house in order to collect garbage and disposing the same in proper disposal grounds outside the village.

The Panchayat also worked towards setting up the Bio-electric plants with an aid of 50 lakhs from the state government of Gujarat. This plant works on the plan to collect cow dung (Gobar) from every house to generate the electricity. The panchayat works to provide electricity to each of the 1200 households in Punsari through this Bio-electric Plant. All the developments were made with an expense of Rs. 14 crores under the supervision of Himanshu Patel with the help of State and Central Rural Development Schemes. With his efforts, Punsari

has received several Adarsh Gram awards and Prestigious Rajiv Gandhi Best Gram Panchayat National Award for the year 2012. This village is a perfect example of Mahatma Gandhi's saying that the "future of India resides in its villages".

Using Punsari as an example, the study intends to demonstrate how a smart village in India can be used as an example to further improve the existing village situation through the use of various types of technological innovations, approaches in which villages can lead to futuristic smart rural development

### **CASE STUDY: SMART CITY: DHOLERA, GUJARAT: INDIA'S FIRST GREEN FIELD SMART CITY**

Imagine yourself in the place where everything is interconnected with internet, a city where homes are connected to internet, gas, water, and electricity via smart grid. A city where its residents are linked to each other and to civic facilities in real time. A city where Internet of things plays a major role in people's life when it comes to transportation, pollution, homes, electricity, water and even waste management. Just imagine a city where everyone dreams to live in, the ideal city and that too in India.

And surprisingly it exists, Dholera, the first smart city of India. Dholera SIR (Special Investment Region) is situated in the coastal regions of Gujarat just 100 Kms away from its capital Ahmedabad. This smart city project aims to urbanize the city with the efficient hi-tech facilities and present it as a preferential and potential business hub to the market.

With a motto of work, live, earn and play, Dholera SIR will be a role model for future cities in India.



**District:** Ahmedabad

**State:** Gujarat

**Language:** Gujarati and Hindi

One of the major key drivers of this development is Delhi-Mumbai Industrial Corridor (DIMC) and there are many ongoing projects such as construction of international airports, expressways, power projects etc. to make it a complete smart city.

Some features of Dholera Smart City:

- Area 920 sq. km
- Developable 567.39 sq. km
- World class Infrastructure and transportation facility inside and outside the city
- Efficient Governance
- Expressways and metro rail to link Dholera SIR with nearby cities
- Airports and seaports
- Connectivity to mega cities such as Ahmedabad, Bhavnagar, Vadodara etc.
- Private sector Participation and Public Private Partnership
- Boosting employment by 2 times and industrial output by 3 times

The city would be the planet's biggest urban town development venture worth \$12 billion

So, as a part of Delhi-Mumbai Industrial Corridor in mid-2009, the state government of Gujarat announced plans for Dholera SIR a 2.7-billion-dollar smart city. Then 2009-10. Gujarat showed 13% economic growth and was labelled as India's growth engine and economic power house and it emerged as the only state in India that was investment friendly during economic downturn because of active lobbying of investment, speed in

clearances of capital investments projects and reduced political interferences. Then in 2010 plans were developed by Hale row for Dholera's development and in 2012 they will become operational. In 2013, Infrastructure giant AECOH was awarded a 30-billion-dollar contract to manage the project.

The next step is to move towards planning structure. City centre will have high tech industrial zone for electronics, bio-technology, pharmaceuticals, heavy machines, etc. passing through them will be high access corridor that will make the transportation easy and fast. Around the city centres there will be residential zone with portions allocated for people of different income status. In the inland regions there will be agricultural zone which will provide city with fresh products. Agricultural zones are set in the inland regions for better supply of water throughout the year. Closer to the cost there will be an entertainment region which have facilities such as sports stadium, outdoor theatres, malls etc. On the edge of the city there would be a line of tourists resorts that would have latest architecture for attraction. These resorts are set on the land that are barren for agriculture that is uncultivated. Throughout the city there would be a knowledge IT zones including universities, a solar park and wind turbine (that will provide green energy) and central logistic hub.

Dholera been so technically advanced will serve as Gujarat's trade canter with high access accessibility of transportation

It will have:

1. **SMART HOSPITALS:** Dholera is planning to have helipods on hospitals, use of most advanced and robotic technology.
2. **SMART ROADS:** It will have such type of roads which will glow in dark, interactive light that is monitor sensors used to light up only that section of road on which car is moving, electric priority lane that will have embedded magnetic field such that vehicle charges as it passes by it and so on.
3. **SMART INFRASTRUCTURE:** It will be intelligently connecting energy systems, buildings and industries to adapt and evolve (smart storage solution, intelligent grid control etc.)
4. **SMART WASTE MANAGEMENT:** It will be generating solutions like sensors placed in waste receptacles to measure the full levels and when filled notify automatically the city collection services to collect the waste. While waste can be carried to plants where energy out of waste can be produced as well as can be converted into manure.
5. **SMART WATER MANAGEMENT:** It will generate sensors used to gather data regarding flow, pressure and distribution of water in the city.
6. **SMART TRAFFIC MANAGEMENT:** It will generate sensors and traffic signals to monitor, control and respond to traffic conditions. Cameras everywhere reduce day to day congestion for improving traffic flow.
7. **SMART HOMES:** It will generate applications and devices can be automatically controlled remotely from anywhere with an internet connection using network deiced or even phones.

So, if these types of facilities are provided in a region then definitely it will bring about growth.

### **CASE STUDY: BROWN FIELD SMART CITY: VARNASI**

Varanasi is one of the ancient cities of India, which is considered to be holy and religious. The city is famous for pilgrimages', temples and Ghats. It is said to be established by lord Shiva. This city attracts lot of tourists because it is considered to be one of the oldest spiritual heritages of India.

#### ***ECONOMY***

Varanasi is dependent on agriculture sector. For the people of Banaras agriculture is one of the most important occupations. It is very famous for handloom industry due to which it attracts lot of tourists which ultimately leads in earning profits. Varanasi's economy depends on following factors:

- *Tourism*
- *Handloom*
- *Educational*
- *Hospitality*

- *Government sectors*

Tourism is one of the major sources of income for the people of Varanasi. It consists of pilgrimage which acts as a source of income for the people.

We can see that the people in Varanasi are more dependent on tourism due to their religious heritage rather than having sufficient knowledge related to science and arts. Due to this scenario most of the people are backward and earn income that is sufficient only to fulfil their basic necessities.

## **VARANASI TEST ON BEFORE BEING SMART**

### **• LITERACY RATE**

According to the census of 2011 the literacy rate, i.e., number of people who can read and write of Varanasi is 75.60% which consists of 83.78% and 66.69% of males and females respectively. The literacy rate of females is very low because they are forced to handle the household chaos, does they are considered to be a burden on family and are married off at very young age, whereas males are considered to earn for families and hence are more educated. Varanasi can only be changed into a smart city when people gain awareness and upgrade the quality of education.

### **• ENVIRONMENTAL CONDITIONS & SURROUNDINGS**

The pollution index of Varanasi is 91.99 which are very high due to high unfavourable environmental conditions. There is an increase in air and water borne diseases which affects the life of residents. The water quality in Varanasi is about 26.97% and which is extremely poor. Another major factor that is included in environmental condition is greenery, the recent statistical data showcases that the quality parks or greenery in Varanasi is about 37.78%.

In spite of development, crime also becomes a major factor of concern in Varanasi. The level of crime prevailing, for example robbery murder, harassment etc... in Varanasi is increasing day by day and it's about 35.42% in numbers. Besides crime, even the level of corruption is increasing at rate of 61.36% per year. This states that Varanasi fails the test in being same, it's more necessary than being smarter for a better tomorrow.

### **• WASTE MANAGEMENT**

Due to development in urban and rural areas, increase in population has led in generating ample of solid waste in the city. Due to lack in transportation of waste and inadequacy of suitable land has led to a critical situation for management of solid waste. Disposable of unnecessary solid waste on the streets drains open spaces water bodies etc... has an adverse effect on environment and human health. A proper infrastructure and financial support are needed for managing the solid waste in Varanasi. Due to increase in solid waste that includes polythene, plastics paper bag and metal which are biodegradable product has led to adverse in pollution. In terms of pollution Varanasi is considered is one of the toxic cities, that generates harmful fumes such as methane, co<sub>2</sub>, nitrogen dioxide and so on.

Government has implemented waste collection system in order to collect waste from 2 lakh 13 thousand 450 household by using handcarts rickshaw and auto trippers which are transported to roadside bin and other secondary storage point. The wastes that are disposed in roadside bin are collected by refused compactor and send to disposable side.

### **• HEALTH CARE**

Health is one of the major factors which are important for development in any country. We can see that Varanasi has developed in terms of skill and competency of medical staff but lacks in equipment's for modern diagnosis and treatment. This leads to higher death rate. The government is trying its entire means with a motto of giving a better livelihood to every person with better equipment's for modern treatment which is accessible to every citizen.



## • STANDARD OF LIVING

“More efforts are needed to eradicate poverty in the country and that education is the best way to fight poverty, said by our prime minister.”

We can see that the people in Varanasi are more dependent on tourism due to their religious heritage rather than having sufficient knowledge related to science and arts. Due to this scenario most of the people are backward and earn income that is sufficient only to fulfil their basic necessities.

The literacy rate of females is very low because they are forced to handle the household chaos, does they are considered to be a burden on family and are married off at very young age, whereas males are considered to earn for families and hence are more educated. Varanasi can only be changed into a smart city when people gain awareness and upgrade the quality of education.

In Varanasi, people do not get easily adapted to the environmental conditions due to advancement of technology. These people mostly believe on ancient facts and figure rather than adapting to the changes.

## CURRENT STATUS OF SMART CITY

The current state of smart cities that existed selected for upgrade to the smart test section that discussed the city's equipment. As well as the situation, few challenges facing the city's smart work were also described. So, as per the current status total INR 189155 Cr is estimated to be total investment in the development of a smart city. These estimated investments approved by cabinet, and if not added budget is needed for the development of a smart city, then state governments must raise funds to improve their programs. This estimated investment is still distributed in both only the specific categories of INR 152499 Cr projects based on location are identified and approved under the auspices urban mechanical system. INR 36656 Cr already planted in the promotion of good programs under pan city launch system. Depending on the smart city mission plan, a list of possible options smart cities at state level and All India Level smart cities Competition is selected based on merit too the selection methods. The final list of eligible smart cities for the “100 new smart cities of India” were released for three consecutive rounds. In the Round-I selection list, 20 cities are shortlisted, too thirteen other cities were selected under the rapid circulation program of smart cities mission. 63 otherwise cities were present selected in Round-II, and in Round-III, 30 smart cities they were identified and selected. All of these selections were completed cities asked to make special vehicle (SPV), it's like a limited company in a city where they're smart the city is organized under the Companies Act, 2013, it will be responsible for implementing the city's good plans as well developing the city as a proposal.

Also, COVID-19 has caused widespread unrest around the world. In India, the challenges of the epidemic were compounded by the complexity of health care and the vulnerability of many to the economic crisis of inflation. Citizens look to their governments for reliable information, guidance and leadership to keep them safe and sound and to avoid economic hardship. The technology used to build smart cities can provide a way forward. As part of his urgent response to the epidemic, the Indian government has implemented the Smart Cities Mission, a move launched in 2015 to empower cities to use technology more efficiently to improve citizen services and overall quality of life. A new report by the World Economic Forum, in collaboration with Deloitte, Technology and Data Governance in Smart Cities: On the Frontlines of India's Fight against COVID-19, shows how Bengaluru, Surat, and Pimpri Chinchwad used technology to link between various city-level agencies to plan and monitor response. their emergency COVID-19. Most of India's smart cities have successfully used their Integrated Command and Control Centres (ICCCs) to set up a “brain and nerve centre” in the management of city activities, such as the "COVID-19 Rooms War" for city-specific data analysis, coordination and interaction with citizens. Using data collected with a variety of sensors and intelligent solutions, cities model data and predictive predictions, create dashboards, scenarios and simulation models to analyse the spread of the virus and plan their response. These centres have provided cities with a single platform to bring community organizations, local businesses and others together to work with city officials on the following activities:

- Dissemination of information and access to citizens
- Contact and follow up on possible cases and treatment planning
- Managing the impact of local locking by arranging door delivery is important

- Provide food and shelter for the economically vulnerable sections of the community and vulnerable citizens
- Ensuring sanitation and hygiene
- Provide emergency services

## **GOVERNMENT INITIATIVES**

The smart villages were adopted by the government in year 2016. The main initiative taken up with regards to smart villages is that 300 villages are taken into consideration as of now and when developed and facilitated with latest technology, these villages will act as growth engines for the development of the nearby areas. We have known that most of the people in our country live in the villages and hence there is a serious need to develop these villages first so that these people can add to the development of the country as well. Moat if these people are very talented and are running their own business so it is time to amplify the voice of these village people and henceforth local for vocal playing its role. Another initiative taken up by government is to bridge the gap between them and CSR in the villages.

For smart villages initiatives like provision of electricity for every household, people were asked to give up their gas subsidies so that village women can get gas instead of working on traditional Chula's, these is an initiative that government is determined to fulfil is provide proper housing facilities to these poor people along with clean drinking water.

### **Smart cities include three initiatives of the government:**

**First** is the smart cities competition in which various cities compete, having latest technology and other factors of a developed nation, and at the last the winner would be declared. The competition perspective has been the first-time thing that has been adopted by the government which will encourage the people of a city to see themselves at a top position on the chart and hence more efforts will be done by them leading to creating of not only 1 but many smart cities henceforth. Because of this a lot of people have been provided with employment opportunities and the 2015 initiative has also led to expansion in mainframe of the population as now people are more aware about cleaning cities, putting waste in dust bins etc.

**Second**, initiative taken by the government is that of make in India which is seen as an encouragement towards the local vendors and businessmen whose work has been for long suffered due to International brand. Make in India is a branch under smart city as the government aims that in this smart city there are more independent entrepreneurs that will lead to increase in income and also there will be increase in the skill development of people. In these smart cities local goods will be promoted to a great extent giving a boost to the labour force and hence the economy's growth.

The third important initiative taken by our government with regards to the smart cities program is that of digital India I.e., these smart cities will be high tech and will be run solely on technology. Buildings, pipelines, drainage system etc. all will have sensors that will be connected to one main building in town and if there is any emergency there would be direct communication through technology and hence safety in these smart cities will be top priority

Moreover, these smart cities will also be promoting pedal bikes and cycles instead of cars in order to decrease the pollution levels, e buses for travelling purposes and also for safety measures women transportation vehicles would be increased.

## **CONCLUSION**

Due to greater development in terms of smart devices, that support innovation and creation. The concept of being smart has gained lot of attention and it will most likely continue to do future too. The need for designing and development of turning out to be SMART in terms of villages and cities which are interconnected internally as well as externally to provide the world class best services to the residents as well as visitors. The idea is to transform the picture of a village into a place which has comprises of all the amenities for better future. Being an aware citizen it's our vision and mission to see our country attaining great heights in all the ways whether it be development of infrastructure or technology. These smart cities and villages collectively not only

seem to attract investment also tourism attraction and reputation in the outside world. The mission itself is a very challenging project and comes with a lot of hindering processes that not only involves technology but large number of stake holders to make it success even economically. Every time we would be requiring a unique or a customise solution for each city based on their demography and geographical structure. It's not the theory where One size fit to all but a study which comes with analytical and problem-solving approach per square kilometre.

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