

# Study and Development of Nashirabad as a Smart Village

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**ABSTRACT:** This paper deals with the study and development of Nashirabad village as a smart village. This village is situated in Jalgaon district. In this paper we have focused on major rain water harvesting, improving sanitation conditions, use of renewable energy, solid & liquid waste management, functional bank account, education facilities and medical facilities. As smart village is the modern energy access acts as a catalyst for balanced development. The study is considering two objectives (1) To prepare cost effective model for village (2) To highlight the prospects of future development.

**KEYWORDS:** Smart Village, Balanced Development, Catalyst, Cost effective model.

## I. INTRODUCTION

Today, the present situation in India centre's around smart city ventures which are viewed as significant and are actualized with high exactness, yet there is an earnest need to concentrate on smart villages as well. The movement of individuals from villages to urban communities will make awkwardness in urban populace which is by implication said to be a weight on urban territories. The smart village is précised to the social oversight by giving compromises to feasible family connection without exasperating the living style of various ages. Village is the most significant factor for advancement of country as they are said to be the heart our country. Building up the village in such a way which itself is self-subordinate in giving and age of work and administrations which subsequently prompts very well association with the external world. Numerous a strategies are being gotten under way by the legislature to expand the expectation for everyday comforts of village networks. Be that as it may, the real advancement lies in reasonable improvement utilizing assets which are normally not given legitimate consideration in the ordinary sense for example Strong natural waste which is typically dumped in irregular areas subject to spoil and tempest water overflow which is generally left streaming in the city without utilizing it effectively by any stretch of the imagination. Villages experience shortage of water during long stretches of high temperature. Water in lakes and lakes get vanished and subsequently, the water table gets diminished. This compares to decreased access to underground water for day by day utilization by means of wells and siphons. By utilizing maintenance measures for houses and open structures, street upgradation which makes up for legitimate tempest water seepage and manure pits for use of strong waste as composts at the appropriate time of time, we can receive a reusing approach which decreases additional costs acquired by the administration for essential comforts for ranchers in villages and ideal usage of assets.

## II. LOCATION OF VILLAGE

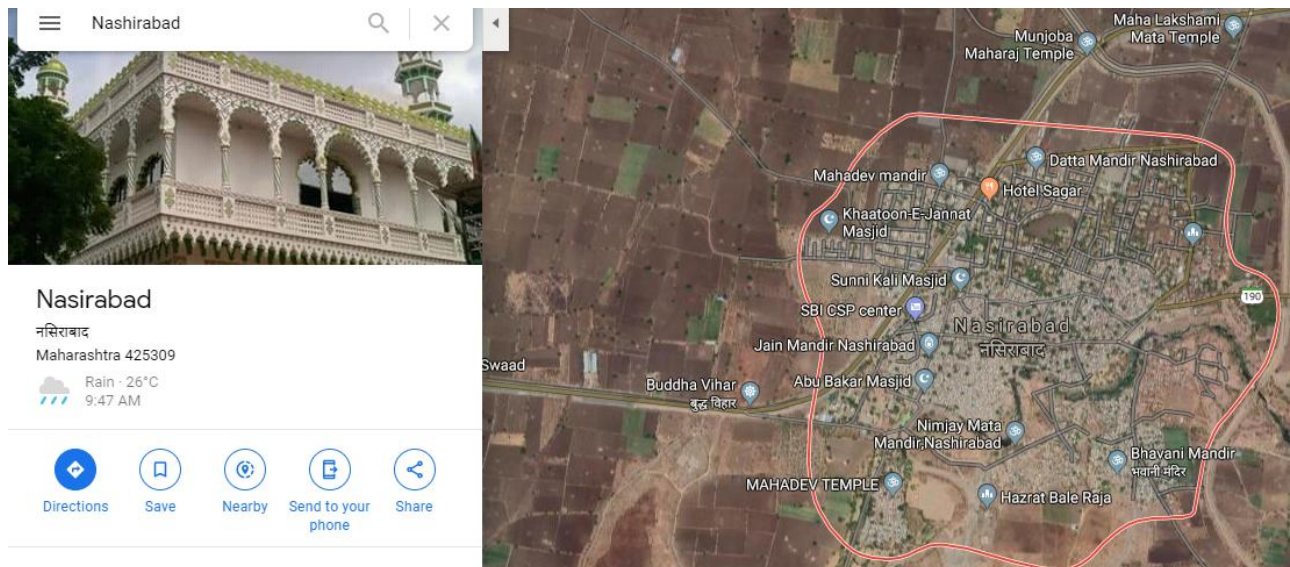
Nashirabad is a huge village situated in Jalgaon Taluka of Jalgaon district, Maharashtra with all out 5512 families dwelling. The Nashirabad village has populace of 26131 of which 13671 are guys while 12460 are females according to Population Census 2011.

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Location of Nashirabad Village

### III. LITERATURE REVIEW

- i. T V RAMACHANDRA<sup>1</sup>, GANESH HEGDE<sup>2</sup>, M D SUBASH CHANDRAN<sup>3</sup>, TEJASWINIANANTH KUMAR<sup>4</sup>, VISHNUMAYANANDA SWAMIJI<sup>5</sup>, "SMART VILLAGE FRAMEWORK", ENVIS TECHNICAL REPORT: 90 APRIL 2015, RESEARCH GATE.

The dream of India as developed nation is possible only with self-sufficient and self-reliant villages. This can be accomplished uniquely with decentralized models of advancement enabling nearby youth while promoting through reasonable administration of common assets – land, water, vitality and human asset. Sixty eight percent of Indian populace dwells in rustic territory and agribusiness is the prime operator of country economy. India positions second worldwide in horticulture items. Farming and associated areas like ranger service, logging and angling utilizes over half of the all-out workforce and records to 18% of the GDP. Despite the fact that the commitment by homestead division has been noteworthy, government's push to different areas has prompted stagnation of horticulture segment.

India is a nation of villages, where the advancement of the country essentially relies upon the advancement of villages. Villages are a littlest authoritative unit in India and were framed for compelling decentralized administration. The confirmations of these decentralized overseeing bodies are found even in Vedic period which were known as 'Sabha' and thrived with every single present day office during Indus Valley Civilization. In any case, Gram Panchayat speaking to a group of villages with comparable financial and geological qualities was framed in 1958 (article of Indian constitution). The Panchayats demonstration happened in 1994, based on 73rd and 74th changes of the constitution for neighborhood self-administration with decentralized power and obligations. This gave protected command to rebuild and redo nearby bodies with established commitments and adequate powers and capacities according to Schedule XI of the demonstration. The nearby self-government through gram Sabha assume a crucial job in the plan of approach and its execution at grass root levels.

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- ii. **BhagyaNiranjanbhai Patel<sup>1</sup>, Prof.Rinni Shah<sup>2</sup> (2017), "Smart village a case study of kolavada village, International Research Journal of Engineering and Technology.**

Gujarat State has been walking from "Swarajya to Surajya" through execution of different network and welfare plans of country improvement. It is fundamental that Gram Panchayats play out their obligations and duties by more projects and self-administration, fill in according to their desires with certain objective and with prescience for social, human, financial and self-awareness and become resolved to build resident administrations, make climate of solid challenge. Subsequently, the VILLAGES would wind up prosperous and savvy, movement from VILLAGES toward urban areas would diminish. In this task to giving this offices to subsidized by government for his different plan Planning for the new VILLAGE to existing VILLAGE. The Gujarat Government to different program and plan for savvy Village. Our coordinated plan is a path forward to be managing the Demographic deficiency and additionally accomplish the objectives of comprehensive development. Thus this undertaking is about giving offices to Sanitation, Solid waste administration, Sawchttta.Scope of this project proper is transforming Normal village to smart village for giving or improving offices strong waste administration, sanitation, Swachta to Development of village and Increase living of standers and work. Attempting to giving or improving this strong west administration, sanitation offices, cleanness actualize office between Village improvement and uplipment. Above offices is to be improved or given through government plan and support and under crusade for shrewd village.

- iii. **Veronika Zavratnik, Andrej Kos and EmilijaStojmenova Duh (2018), Smart Villages: Comprehensive Review of Initiatives and Practices, [www.mdpi.com/journal/sustainability](http://www.mdpi.com/journal/sustainability)**

Over ongoing decades, individuals' (provincial and urban) networks are confronting various social and financial changes and difficulties. A portion of those difficulties have been progressively tended to through the focal points of innovative advancements and digitalization. In this paper, we have made a survey of officially existing practices while concentrating on the current usage of the Smart Village idea and the significance of computerized change for provincial territories. We give extraordinary thoughtfulness regarding EU strategies that we are utilizing as an effectively existing structure for understanding our very own approaching models. We have demonstrated the parallels between the discoveries and bits of knowledge from various districts and made an assessment of exhibited rehearses. Our principle contention comes from our very own past encounters and encounters of other research draws near, and is grounded on the contention that rustic regions are not uniform, and that savvy provincial advancement must be connected in mix with spot based methodology. We present the instances of Slovenian pilot practices and bolster our contention by proposing the FabVillage idea.

- iv. **Anand Singh & Megh Patel (2018), "ACHIEVING INCLUSIVE DEVELOPMENT THROUGH SMART VILLAGE", Journal of Energy and Management.**

Urban communities are being packed at an extraordinary pace all around, 30% of the total populace was urban in 1950 with a projection of 66% by 2050 (World Urbanization Prospects, 2014). Absence of essential luxuries and restricted monetary development in villages leads toward uncontrolled relocation from country to urban zone. Current situation of urban living shows urban communities are attempting to adapt up to the fundamental framework like transportation, human services, lodging and utilities. 30% of urban occupants are living in ghettos. While up and coming urban advancement tasks are centered around creating shrewd urban areas, improvement of more brilliant villages is disregarded. Provincial advancement will maintain a strategic distance from further movement and can acquire the parity the whole environment. Out of 6,50,000 villages in India, the vast majority of them have lacking and simple foundation which neglects to satisfy the essential need of villagers. Villages and other remote areas have poor instructive offices, unpredictable water supply, power supply, inappropriate sanitation, transport, street availability and framework. India being a billion-in number country has 68.84% of villagers under 30 years of age. Consequently, a gigantic asset pool is underutilized and left with poor way of life with small wages. Every one of these components push villagers to relocate to VILLAGES and urban areas looking

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for better business openings and personal satisfaction. Farming has been a noteworthy supporter of India's GDP since freedom. It is diminishing step by step from 45.48% in 1950 to 15.79% in 2013 ("Sector-wise commitment of GDP of India", 2017) as a result of absence of solid strategies and its execution at grass-root level. It has been the essential wellspring of occupation for villagers, which makes half business pursued by Small and Medium Enterprise (SME) division with a portion of 40%. Work in India's agribusiness area has diminished impressively, from 60% in 1994 to half in 2013 (World Development Report, 2013).

### IV. METHODOLOGY



### V. INFORMATION/ DATA OF VILLAGE

Nashirabad is a large village located in Jalgaon Taluka of Jalgaon district, Maharashtra with total 5512 families residing. The Nashirabad village has population of 26131 of which 13671 are males while 12460 are females as per Population Census 2011. In Nashirabad village population of children with age 0-6 is 3255 which makes up 12.46 % of total population of village. Average Sex Ratio of Nashirabad village is 911 which is lower than Maharashtra state average of 929. Child Sex Ratio for the Nashirabad as per census is 829, lower than Maharashtra average of 894. Nashirabad village has higher literacy rate compared to Maharashtra. In 2011, literacy rate of Nashirabad village was 83.49 % compared to 82.34 % of Maharashtra. In Nashirabad Male literacy stands at 88.73 % while female literacy rate was 77.82 %. As per constitution of India and PanchyatiRaj Act, Nashirabad village is administrated by Sarpanch (Head of Village) who is elected representative of village. Our website, don't have information about schools and hospital in Nashirabad village.

Caste factor of village consists Schedule Caste (SC) constitutes 4.88 % while Schedule Tribe (ST) were 2.06 % of total population in Nashirabad village. In Nashirabad village out of total population, 9106 were engaged in work activities. 84.02 % of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 15.98 % were involved in Marginal activity providing livelihood for less than 6 months. Of 9106 workers engaged in Main Work, 825 were cultivators (owner or co-owner) while 2677 were Agricultural labourers.

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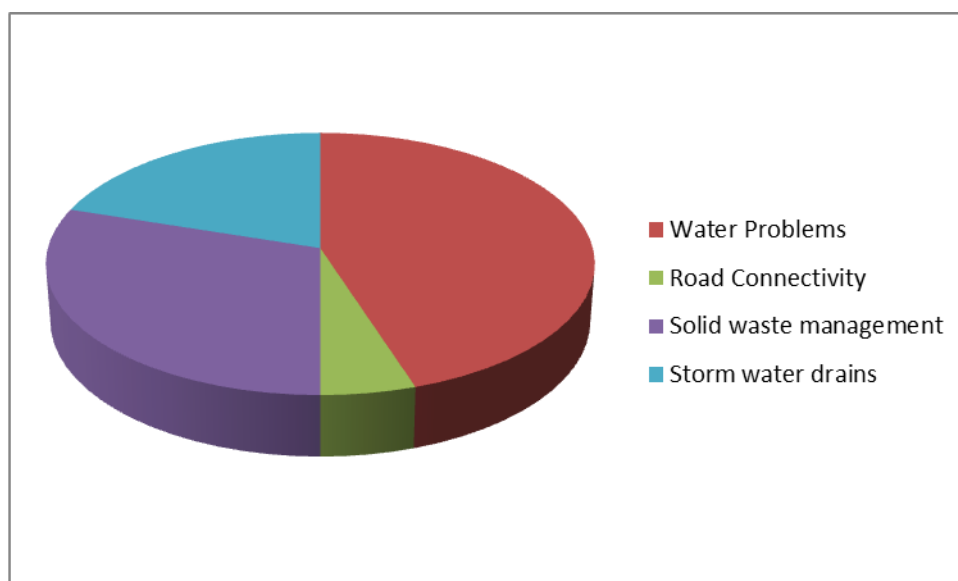
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Particulars	Total	Male	Female
Total No. of Houses	<b>5,512</b>	-	-
Population	<b>26,131</b>	13,671	12,460
Child (0-6)	<b>3,255</b>	1,780	1,475
Schedule Caste	<b>1,274</b>	690	584
Schedule Tribe	<b>537</b>	287	250
Literacy	<b>83.49 %</b>	88.73 %	77.82 %
Total Workers	<b>9,106</b>	7,148	1,958
Main Worker	<b>7,651</b>	-	-
Marginal Worker	<b>1,455</b>	911	544

Data of Village

### Major Problems in village





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## VI. EXPERIMENTAL SOLUTIONS

### 1. WATER PROBLEMS

The primary issue influencing ordinary living in the region is shortage of water for three months of long time of summer. The issue emerges because of bringing down of water table in the territory because of decreased, even ceased precipitation for a considerable length of time and comparing utilization of water by means of hand siphons and wells. The utilization of water can't be decreased for sure due to consistently expanding populace and their day by day water needs. In this way, the best way to adjust the circumstance is diminishing and, sometimes, halting the speed of tempest water spillover by taking the accompanying proposed measures

#### Suggested Solutions

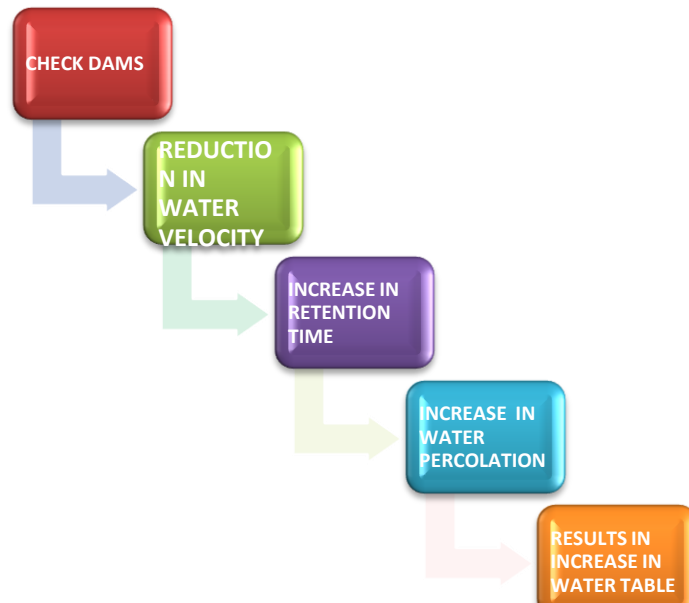
- **Rooftop Rain Water Harvesting**- The most attempted and tried technique that can give an answer for water issues is by utilizing precipitation water reaping arrangements in homes and in open spots present, for example, school, sanctuary and the Gram Panchayat building. Since the majority of the rooftops saw in the village are slanted, the changes required to cause houses to adjust downpour water collecting framework will be insignificant. Serious Problems of Nashirabad Village Water Problems Road Connectivity Storm Water Drains Solid waste Management Real Estate Development and Management 227. This framework can be isolated into three segments, Catchment territory, Collection gadget and a Conveyance framework. Catchment zone for this situation ought to be inclined since the roofing material utilized in lion's share houses is earthenware tiled rooftop which might be liable to water drainage whenever presented to delayed water maintenance. Transport framework is fundamentally the pipe design utilizing which water is conveyed from the catchment zone to the accumulation chamber. PVC channels can be utilized as a moderate choice, yet the sturdiness of the movement framework endures. On the off chance that CI channels or created iron funnels are utilized, it builds the strength yet comparing material cost increments. Uses of metal funnels have an impediment of consumption and rusting too. Accumulation gadget can be either over the ground level or underground. On the off chance that it is over the ground, it will go about as a water stockpiling zone promptly available for day by day use, for example, planting, washing garments, clean purposes and so on. Underground tanks will require an extra siphoning framework to obtain entrance which will require greater power. Both the alternatives are proposed since the region has adequate power supply.
- **Artificial Recharge** - A check dam is identified with the water table similarly a glass of water is identified with a human body. We are essentially sustaining water inside the earth surface by making fake water contaminants. The common procedure by which check dams builds the water table is as per the following

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Check dams

## 2. ROAD PROBLEMS



The roads in some part of village are in good condition but the major problem arises in the monsoon season. Inappropriate arrangement and no arrangement of side channels tempest water channel. The solution to these problems is Need of Proper Roads in Rural Area is to ship rural merchandise from cultivating area to VILLAGE, to move merchandise from VILLAGE to adjacent markets/urban areas to sell their merchandise and to interface with inside residences.

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Proposed Road in Rural zone: For the development of street in rustic region two sorts of Terrain can be recognized

1. Level Terrain
2. Hilly Terrain

In level landscape street just as sloping territory street development, carriageway will be compacted well so street portion not settles during heaps of Tractor with trailer.

### 3. Storm Water Drain

**Problem:** Because of no arrangement of tempest water channel alongside street, water streaming may come on street and cause mud and make snag for transportation of vehicles.

**Need:** By giving tempest water depletes, all the water coursing through it tends to be gathered for some time later and put away at accumulation point. All tempest water channels will be available to sky, odds are there that it might get sullied because of strong and fluid water, so at gathering point a wire chaos will be introduced in order to have an underlying screening of any strong waste into in accumulation pit/capacity region. Aggregated with part of strong waste because of which there will be deterrent in stream of water. In light of this water may leak out of channels and gather on street and make impediment for transportation

### 4. Solid Waste Management

**Problem:** Inappropriate capacity of waste in VILLAGE and no isolation of waste at source makes troublesome in transfer of waste.



**Need and Implementation:** To oversee strong water viably, squanderer which is dumped close house or at an assigned region will be ceased and isolation of waste will be done at the source itself. By and large three sorts of waste are produced from primary wellspring of waste age for example House. Waste can be isolated there itself as Wet, Dry and Hazardous waste. Three separate containers will be kept up by house proprietor (Preferably three diverse shading, for example, (a) The Green pail is for discarding kitchen reject, extra sustenance and other wet waste; (b) The Blue can is intended for keeping dry squanders; and (c) the Red basin is for keeping unsafe squanders like batteries; combined bulbs) and all these three waste will be placed in its assigned receptacles as it were. The gathering van (Eg.GhantaGadi)



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can legitimately dump the isolated waste at its assigned territory. An assigned territory for transfer of waste will be chosen by the Gram Panchayat with the goal that wet waste can be utilized for arrangement of composite manure and dry waste can be isolated as recyclable and non-recyclable. A preparation program will be led by government to make comprehend VILLAGE individuals' significance of Solid Waste Management.

## 5. Cost Analysis

Sr.NO	Methods	Cost
1	Solid Waste Management	10,35,715
2	Storm Water Drain	35,75,000
3	Roads	10,55,780
4	Water Harvesting	1,86,900

## VII. CONCLUSION

After the above approaches and arrangement plan is actualized the serious issues of the Nashirabad village will be diminished to a bigger degree and furthermore results to a fair type of improvement in the village. Because of execution of a few government approaches. The way of life of individuals will be brought to more noteworthy degree up in long haul range. The usage of new strategies and techniques for expanding the ground water level ought to be rehearsed and appropriate preparing to villagers will prompt beat the issue effectively. The Development of Smart Cities will prompt Balanced Development all through the nation. Executing the keen advancement plan for each village over the savvy urban communities will lessen the relocation issue and will prompt a reasonable improvement and at last will have positive effect on national economy. As the movement level in urban communities will decrease there would be ideal usage in city which will lead them to keen urban communities also.

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