

Ministry of Panchayati Raj
Government of India

GRAMODAY SANKALP



Giriraj Singh
Minister of Panchayati Raj
& Rural Development



Narendra Modi
Prime Minister



Kapil Moreshwar Patil
Minister of state for
panchayati Raj

SVAMITVA



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- Use of geospatial data for Panchayat development Plan
- Women's Empowerment through Co-ownership in the Property Cards...

Shri Giriraj Singh reviews progress on 'Project for Creating 250 model Gram Panchayat Clusters across India'



Shri Giriraj Singh, Union Minister of Rural Development & Panchayati Raj chaired a meeting in New Delhi held via video conference on 16th March, 2023 to review the progress on 'Project for Creating 250 Model Gram Panchayat Clusters across India' and interacted with Young Fellows (YFs) of National Institute of Rural Development & Panchayati Raj (NIRD&PR), and State Project Coordinators (SPCs) of 250 Model Gram Panchayat Clusters. The meeting was attended by Shri Sunil Kumar, Secretary, Ministry of Panchayati Raj, Dr. G. Narendra Kumar, Director General NIRD&PR, Dr. Chandra Shekhar Kumar, Additional Secretary, Ministry of Panchayati Raj, and Shri Vikas Anand, Joint Secretary, Ministry of Panchayati Raj. More than 210 participants including Young Fellows from different parts of the country joined the meeting in virtual mode. Speaking on the occasion, Shri Giriraj Singh emphasized on developing Model Gram Panchayats ensuring holistic development of the Gram Panchayats covered under 'Project for Creating 250 Model Gram Panchayat Clusters across India'. He stressed that Young Fellows working in remote areas should set an example with community participation to ensure that more children than ever receive quality education and students do not drop out of school. Young Fellows may play significant role in different thematic areas under Localization of Sustainable Development Goals (LSDGs) in Gram Panchayats. Union Minister underlined the need for working on strategy for achieving saturation mode of various schemes implemented in the Gram Panchayats in mission mode, with convergence of available resources and in coordination with all stakeholders for Poverty Reduction and Economic Empowerment of these Model Gram Panchayats. His direction to all YFs for achieving 'Shiksha Yukt Panchayat', 'Gender Rozgar Yukt Panchayat', 'Swachhata Yukt Panchayat', 'Green Panchayat', 'Swasth Panchayat', and 'Self-sustainable Panchayat' by ensuring and conducting 6 Gram Sabhas by direct involvement of the community. The NIRD&PR was suggested to convene a day-long national-level workshop with active participation of all YFs and develop a monitoring dashboard to review the progress and achievements in Gram Panchayats covered under this Project.

The highlight of the meeting was the discussion on future strategies and way forward to overcome the challenges and proper utilization of available resources towards creating Model Gram Panchayats across the country. At the outset, a detailed presentation on various aspects and progress made under 'Project for Creating 250 Model Gram Panchayat Clusters across India' was made by NIRD&PR. Some YFs shared their experiences at the grassroots level.

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गिरिराज सिंह
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सत्यमेव जयते



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GOVERNMENT OF INDIA
KRISHI BHAWAN, NEW DELHI

Message

I am happy to note that the Ministry of Panchayati Raj is bring out the 14th issue of 'GramodaySankalp' magazine with special theme on the 'SVAMITVA' Scheme.

SVAMITVA Scheme is playing a pivotal role in the empowering the rural household owners by providing Record of Rights to them. This is attributable to the visionary idea of the Hon'ble Prime Minister. This initiative will create new chapter on rural development. The scheme outcomes are providing multi-fold benefits to a larger section of stakeholders by providing a bankable record of rights that can be used to avail bank credit, creation of high-resolution maps to facilitate better rural planning, reformed land governance, streamlining of property taxes at gram panchayats and establishment of GIS infrastructure to be utilized by various departments and agencies.

It is a matter of pride for us that the Hon'ble Prime Minister has been mentioning the importance and progress of SVAMITVA scheme and the positive changes coming through it in rural India from time to time on various national and international fora.

I am sure that this issue of Gramoday Sankalp will disseminate, inert alia, information related to SVAMITVA to the Panchayats, elected Panchayat representatives and other Stakeholders.

(GIRIRAJ SINGH)

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भारत सरकार



KAPIL MORESHWAR PATIL
MINISTER OF STATE
MINISTRY OF PANCHAYATI RAJ
GOVERNMENT OF INDIA



Message

It is a matter of great pleasure that the 14th issue of '**Gramoday Sankalp**' magazine is being published on the theme '**SVAMITVA**' Scheme.

Transformation of the villages and the Panchayats by ensuring the basic quality of life in the villages is the need of the hour. An economic boost in the villages is also essential to India's vision of achieving global power status. SVAMITVA scheme has been launched by Hon'ble Prime Minister on National Panchayati Raj Day, 24th April, 2020 with a resolve to enable economic progress of Rural India by providing "Record of Rights" to every rural household owner in rural inhabited area.

Through the advent of SVAMITVA Scheme, a vast trove of opportunities has been unlocked in the field of land administration, rural and spatial planning, land monetization, survey infrastructure creation, and own-source of revenue generation for gram Panchayats, among others. It is of utmost importance that the States and UTs seize the opportunity and make the best use of the outcomes of the SVAMITVA Scheme.

I am sure that this issue of Gramoday Sankalp, based on the SVAMITVA, will be useful for the Panchayats, elected Panchayat representatives and office bearers as well as the general public.

(Kapil Moreshwar Patil)

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Message

It gives me immense pleasure to present the 14th issue of Gramoday Sankalp to the readers that is dedicated to SVAMITVA Scheme.


SVAMITVA scheme was launched by the Hon'ble Prime Minister on National Panchayati Raj Day, 24th April 2020 with a resolve to enable the economic progress of Rural India by providing a "Record of Rights" to every rural household owner in the rural inhabited areas. The scheme covers multifarious aspects viz. facilitating monetization of properties and enabling bank loans; reducing property-related disputes; comprehensive village-level planning. Rural India has gained immensely through the implementation of the SVAMITVA Scheme.

As on Date, drone flying has been completed in 2.36 lakh villages which is 63% of the overall target of 3.72 lakh villages and Drone survey is completed in 1 State and 4 UTs. Property Cards of all the inhabited villages of Haryana followed by Uttarakhand, Puducherry, Andaman and Nicobar Islands, and Goa has been prepared.

In this issue of Gramoday Sankalp, articles related to the different aspects of SVAMITVA, like use of Drone technology in survey, Use of Geo-spatial data in Panchayat Development Plan, effects of SVAMITVA Scheme on rural economy have been included.

This scheme is implemented by the Ministry of Panchayati Raj with participation of central agencies like Survey of India, Revenue Departments of the participating States with active cooperation of Panchayati Raj Institutions (PRIs) at the grassroots level. I take the opportunity to express my sincere gratitude to all stakeholders in this endeavour.

I am hopeful that the issue will be of great help to the readers.


29.3.23
(Sunil Kumar)

Endorsement by the Hon'ble Prime Minister of India

Hon'ble Prime Minister launches distribution of Property Cards under SVAMITVA scheme. (11th October 2020)

"Ownership of land and house plays a big role in the development of the country. When there is a record of property, citizens gain confidence"

"SVAMITVA Scheme will help in strengthening the Panchayati Raj system for which efforts are underway for the past 6 years"

-Hon'ble Prime Minister



Hon'ble Prime Minister addressed the 76th session of the United Nations General Assembly (UNGA) in New York, where he talked about the Svamitva scheme. (25th September 2021)



Ownership record is also very important. Many residents of all the big nations in the world do not have property rights on their own land. In India, we are conducting mapping with the help of drones in six lakh villages and helping people get digital records of their land. This digital record, along with minimizing property dispute, is also beneficial for access to credit i.e. availing bank loan"

-Hon'ble Prime Minister at the United Nations General Assembly (UNGA) in New York

Hon'ble Prime Minister distributed e-Property Cards to beneficiaries under SVAMITVA scheme. (06th October 2021)

"SVAMITVA scheme, villagers will find it easier to get money through bank loans for expanding their businesses, agriculture and will not be forced to spread their hands before a third person"

-Hon'ble Prime Minister



Hon'ble Prime Minister highlighted the role of technology during his address to the United Nations World Geospatial International Congress. (11th October 2022)



"Take our SVAMITVA scheme for example. We are using drones to map properties in villages. Using this data, villages are receiving property cards."

- Hon'ble Prime Minister during an address to United Nations World Geospatial International Congress

Hon'ble Prime Minister speaking at India Today Conclave 2023 (18th March 2023)

"Through SVAMITVA Yojana, land mapping is being done in India with the help of drone technology. Over 1 crore property cards have been issued, this had reduced fear among villagers, that if they left villages, their land would be encroached upon"

- Hon'ble Prime Minister during India Today Conclave 2023



ABOUT SVAMITVA SCHEME

★ SVAMITVA Division, MoPR

SVAMITVA scheme was launched by the Hon'ble Prime Minister on National Panchayati Raj Day, 24th April 2020 with a resolve to enable the economic progress of Rural India by providing a "Record of Rights" to every rural household owner in a rural inhabited area. The scheme covers multifarious aspects viz. facilitating monetization of properties and enabling bank loans; reducing property-related disputes; comprehensive village-level planning.



2. "Record of Rights" to the household owners in rural inhabited areas under the SVAMITVA Scheme are provided through the use latest drone Technology and Continuously Operating Reference Station (CORS) technology for capturing images. The high resolution and accurate image base maps have facilitated the creation of the most durable record of property holdings in these areas. Such accurate image base maps provide a clear demarcation of land holdings in a very short frame of time compared to on-ground physical measurement and mapping of the land parcels. Further, these maps are free from measurement errors to a very large extent, which is not the case with physical on-ground measurements. Such maps provide a visual aid to the landowners as well as to the officials for identifying and resolving any property dispute and are also an invaluable tool for local-level planning.

3. The Scheme is implemented in a phased manner. Based on the successful implementation and outcome of the pilot phase, the scheme was rolled out for implementation across all States/UTs on 24th April 2021. So far, 31 States and UTs have signed MoU with the Survey of India for the implementation of the SVAMITVA Scheme in their States/UT.

4. The scheme aims to achieve the following objectives

- » i. Creation of accurate land records for rural planning and reducing property-related disputes.
- » ii. To bring financial stability to the citizens in rural India by enabling them to use their property as a financial asset for taking loans and other financial benefits.
- » iii. Determination of property tax, which would accrue to the GPs directly in States where it is devolved or else, add to the State exchequer
- » iv. Creation of survey infrastructure and GIS maps that can be leveraged by any department for their use.
- » v. To support the preparation of a better-quality Gram Panchayat Development Plan (GPDP) by making use of GIS maps

5. As on 23.03.2023, drone flying has been completed in 2.36 lakh villages which is 63% of the overall target of 3.72 lakh villages and Drone survey is completed in the states of Madhya Pradesh and UT of Lakshadweep, Delhi, and Dadra & Nagar Haveli, and Daman & Diu. With close coordination between the States and Survey of India. Property Cards of all the inhabited villages of Haryana followed by Uttarakhand, Puducherry, Andaman and Nicobar Islands, and Goa have been prepared.

SVAMITVA Scheme

A stepping stone towards upliftment of rural economy

★ Arun Kumar Mishra¹

★ Ms. Karnika Kaushik

Villages are at the core of the country's soul. Gandhiji wanted villages to attain Moral, Social and Economic Independence. He was enamored of Immemorial 'Village Republics' and has once said "The true India is to be found not in its few cities, but in its seven hundred thousand villages. If the villages perish, India will perish too".

Transformation of the villages and panchayats by ensuring the basic quality of life in the villages is the need of the hour. Economic fillip in the villages is also pertinent to India's vision of achieving global power status. Dream of a self-reliant India can be fulfilled only through self-reliant villages.

The concept that growth will "trickle down" to the poor and most disadvantaged among us has been proven to be fundamentally flawed. Instead, we have learned that when we invest in making economies more equitable from the bottom up, economic growth is likely to be better for longer periods. India, with 1.4 Bn people is a home to second highest population in the world with 64% of population living in rural areas. Since Independence, India has made significant progress in improving the quality of life and providing access to various infrastructure for rural India and rural areas have been the epicenter of the government policies and reform. According to the NFHS-5 report released in March 2022 - 97% of India's households have electricity whereas 95% of rural and 99% of urban households have electricity. As on 16th March 2023, 11.44 crore rural households have access to tap water connections out of a total 19.35 Cr rural households.

It has been an ancient knowledge that for leading a better quality of life and economic growth, human kind has to be in harmony with 5 elements of nature viz. Air (Vayu),

Water (Jal), Earth (Prithvi), Fire(Agni) and Ether(Akash). The government has left no stone unturned in ensuring equitable access for rural population to the 5 elements through its reformative schemes like UDAN (Udega Desh Ka Aam Nagrik),JJM (Jal Jeevan Mission), PM-UJWALA, DILRMP, etc. Land is one of the most complex and vital resources on our planet as it caters to fundamental need for food and shelter governed by complex regulations that vary from state to state, different Departments and Ministries handle different aspects viz, forest, agriculture, urban, rural and tribal land. Land is an essential resource for most economic activities aimed at the creation of economic growth in the world. The management of land resources, therefore, is considered an important component of the economic policies of any country. There have been transformative steps taken by the government to provide rights to the farmers for the agricultural land (Abolishment of Zamindari), Protect indigenous land rights of tribal (Autonomous District Councils) however, few bottlenecks still remain like lack of mortgageable record of right for inhabited land (abadi area) due to unavailability of prior survey records, or non-recognized land rights. The inhabited areas (Abadi land) of rural India had largely remained at the fringe of any reforms. Few states had conducted survey of Abadi area and virtually there exists no prior maps of abadi areas. There had not been a coordinated effort to survey the Abadi land in India's 6.6 lakh villages. This had created a set of problems for rural populations in Abadi area like inability to take loans on their property, lack of accurate land records, resorting to money lenders instead of

1. Deputy Secretary, SVAMITVA Division MoPR

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mainstream public sector banks for taking loans, ad-hoc planning or unplanned development of villages due to absence of any map of abadi areas. These residents of rural areas are left with no other option but to avail loan from non-institutional lenders who may charge them exorbitant interest rates; lack of awareness among the uninformed rural populace leads them into a spiraling debt trap, leaving them at the mercy of the moneylenders. For example, when it comes to access to institutional credit, as per the Household Assets and Indebtedness Survey 2013 conducted by the Ministry of Statistics and Programme Implementation (MoSPI), about 20% of rural households have reported outstanding credit with non-institutional lenders, while the same number is at 10% for urban India.

As a matter of fact, an average household in India holds about 77% of its total assets in real estate (which includes residential buildings, buildings used for farm and non-farm activities, constructions such as recreational facilities, and rural and urban land). This lack of Record of Rights (RoR) in the rural inhabited areas in India results in a low level of land governance, presumptive ownership of properties, long pending property-related disputes, and illiquid land market in rural areas.

Considering the lack of Record of Rights (RoR) and absence of survey of inhabited (abadi) areas in villages, there was a requirement to provide RoR in the form of Property Cards to village household owners utilising the latest drone survey technology leading to conceptualization of SVAMITVA (Survey of Villages Abadi and Mapping with Improved Technology in Village Areas) Scheme. Traditional chain-based, cross-staff, and theodolite-based surveying techniques generally require line-of-sight between the instrument and the ground and a clear view of the whole area to be surveyed.

Also, the surveyor has to move with the instruments from one place to another for demarcating property parcels. This methodology of land survey is laborious, time-consuming, expensive, and prone to human as well as instrumental errors.

At the core of our Good Governance Efforts in India's Villages is to leverage Power of technology for the welfare of people. An example of this is SVAMITVA which has given great results: Shri Narendra Modi

SVAMITVA Scheme uses the combinations of Drones and CORS network (Continuously Operated Reference Stations) to accurately survey large Abadi areas in a very short span of time. The 1:500 scale geo-tagged maps generated through the drone survey are created at a fraction of the cost and are of very high accuracy i.e., 3-5 CMS, which the traditional methodology does not provide. SVAMITVA Scheme is the largest survey of rural abadi area undertaken in the world.

There is a lot of excitement and curiosity among the residents of the villages for the SVAMITVA scheme. Residents have known the reality of their land holdings through Janbhagidhari during the Chunna marking stage. The scheme has been under a lot of discussion among the village residents and some of the beneficiaries have also availed bank loans for constructing homestays. Residents are quite happy with the property cards they have received” - Smt. Suman Godiyal, Gram Pradhan, Goda Village, Pauri Garhwal, Uttarakhan

The SVAMITVA Scheme aims to provide the 'record of rights' to village household owners possessing houses in inhabited rural areas and issuance of property cards to the property owners that are backed by State Revenue or Panchayati Raj Acts. This would facilitate monetization of rural residential assets for credit and other financial services. The process of SVAMITVA Scheme has been designed to ensure Janbhagidaari (People participation) in the form of Gram Sabhas that are conducted to sensitize rural populace about the scheme, demarcation of properties using chuna lines is done in presence of property owners of the village, and disputes if any are settled amicably in the gram panchayat

“I was able to avail a loan of Rs. 2,90,000 under SVAMITVA scheme to increase my business” - Sh Pawan, Harda, Madhya Pradesh

The geo-referenced high resolution maps also provide an opportunity to Gram Panchayat to update their property registers with accurate number of properties in each villages as well as their dimensions. This provides a way to streamline property tax assessment and collection in gram panchayats where it is devolved, thus leading to generation of own sources of revenue which could be gainfully utilized for various developmental works

“Through the digitized maps created, Gram Panchayat was able to increase the property tax collection by 16% as a result of identification of ownerships of vacant land” – *ShVilas Badadhe, Secretary, Waluj Gram Panchayat, Pune, Maharashtra*

In summary, the scheme aims to:

- Provide the right of the property to the household through accurate land records
- Open avenues for applying loans from mainstream financial institutes by Property Owners
- Reduce disputes related to property
- With clear titles, accurate size determination and transparent land titles, SVAMITVA provides the States with an unprecedented prospect of empowering the Gram Panchayats to streamline property tax assessment and collection, which would be available to the Panchayat for local use/ development work. This would provide financial independence to the Gram Panchayats.
- Create accurate land records and GIS maps, to support in preparation of better-quality Gram Panchayat Development Plan (GDPD)
- Enhance the socio-economic profile of the Panchayats, making them self-sustainable

“Dispute Settlement between Ram Prasad, Jagat Ram and Shanti Prasad. After the dispute settlement, the cattle ranch was constructed on the property leading to social harmony among residents. Also, Ownership rights of Raj Rajeshwari Temple was provided to the gram panchayat due to which construction work was undertaken for building the temple for social inclusivity in th Gram Panchayat” - *Dhanaulti Taluka, District Tehri Garhwal,*

Resounding Success of SVAMITVA Scheme

As on 15th March 2023, 1.22 Crore property cards have been prepared for 72997 villages. Drone survey has been completed in 2.34 lakh villages. Scheme has been saturated in Haryana, Uttarakhand, Goa, A&N island, and Puducherry.

Standing true to its mission of being a **Jan Samanya ki Sarkar**. Scheme has received support from National as well State leadership wherein property cards have been directly handed over to beneficiaries by Hon'ble Prime Minister in various events and by Chief Minister of States during various state level events.

1. As a first milestone of the Scheme, Hon'ble Prime Minister launched the physical distribution of Property Cards to about 1 lakh Property Owners of 763 villages of six Pilot Phase States (Maharashtra, Karnataka, Haryana, Uttar Pradesh, Uttarakhand and Madhya Pradesh) on 11th October 2020.



On 24th April 2021, Hon'ble Prime Minister launched Nation-wide implementation of Scheme and distribution of about 4.09 lakh property owners of 5002 villages of Haryana, Karnataka, Madhya Pradesh, Maharashtra, Uttar Pradesh, Uttarakhand and Rajasthan.



* On 6th October 2021, Hon'ble Prime Minister distributed 1.70 lakh property cards to 3000 villages in Madhya Pradesh.

* On 23rd December 2021, in a continuous endeavor to strengthen the rural economy and reduce land related disputes at grassroots level, Hon'ble Prime Minister distributed Gharauani to over 20 lakh beneficiaries of Uttar Pradesh in Varanasi.



* On 24th April 2022, On the occasion of National Panchayati Raj Day, Hon'ble PM distributed property cards in Palli GP, Samba District, Jammu and Kashmir.



* Hon'ble Chief Minister of Uttar Pradesh distributed 10.81 lakh Gharauani across 75 districts on 23rd June 2022.

Jan-Bhaagidaari

A participative approach towards land survey

★ Garvit Trivedi

SVAMITVA scheme is a collaborative effort of the Ministry of Panchayati Raj, State Panchayati Raj Departments, State Revenue Departments, and Survey of India. The activities involved in implementing the scheme are broadly divided into Pre-Survey, Survey, and Post Survey activities.

i. Preparatory activities for the implementation of SVAMITVA scheme. The benefits of the scheme are revolutionary and in order to realize the benefits/outcomes of the scheme as mentioned above, activities related to pre-survey must be followed diligently in coordination with the stakeholders as the involvement of each stakeholder is important and plays an important role in the activities. Since Survey of India carries out drone survey activities and State is responsible for implementation of the scheme in the State, an agreement between the Survey of India and State is signed for the implementation of the SVAMITVA scheme. Soon after the signing of the agreement, States and Survey of India are required to perform a few activities to smoothly implement the scheme.

them. Herein IEC activities are conducted by Panchayats to sensitize the residents of the village about the scheme. The Panchayats may organize a Gram Sabha for sensitization and mobilization, showcasing short movies/videos on the scheme. Wall paintings, short plays, or Nukkad Natak may also be organized by the Panchayats. Panchayats shall also use social media and print media to disseminate information for a wider reach. State also needs to insert or provision for SVAMITVA implementation within its Act/Rules.



Gram Sabha

The scheme aims to generate property cards for residents of the Abadi area. Considering this, within a district, the number of Abadi villages is to be notified by the state that will be surveyed under the scheme. The Panchayats are also required to chuna-mark the Abadi boundaries. Survey of India officials provides training to Revenue officers on survey processes like Chuna marking, verification of maps which are generated after drone survey, etc. The other component of the SVAMITVA scheme is the establishment of CORS in the States by Survey of India. The state has to provide the sites to Survey of India it is recommended that the identified site must be in Government premises with enabled electricity and internet connectivity.



Wall painting informing about benefits of the scheme in Chhattisgarh

The Information, Education & Communication (IEC) strategy aims to create awareness and disseminate information regarding the benefits available under the scheme and to guide the rural population on how to access



“As a result of cooperation between Survey of India, Tehsil level officers, Gram Panchayats and State Revenue officers; the Drone team covered record 11 villages in a single day”

– Sankheda Taluka, Chhota Udepur District, Gujarat



Setting up of Ground Control Points

Drone-based Survey Process

After completing the pre-survey activities, State and Survey of India both are indulged in the drone Survey. Before starting drone flying, Survey of India is required to establish Ground Control Points (GCP) which will define the drone path to capture aerial images. Once the images are captured and Ortho-Rectified Images (ORI) are generated it is further processed for the creation of maps and high-resolution spatial data. Survey of India is also responsible for feature extraction which involves the collection of data, Image acquisition, image segmentation, and image processing to accurately map and demarcate rural residential properties. After feature extraction, first draft map is submitted by Survey of India to the State for verification of the details mentioned in the map of the village.



iii. Activities involved under post-Survey

Post-Survey Activities, the State has to ground verify the first draft map provided by Survey of India. Ground verification is an important step to ensure the accuracy and reliability of the property maps created through the feature extraction process. It involves the physical verification of the property boundaries and other features using ground-based surveying techniques.

- The land was taken up by Gram Panchayat as public lands or properties.
- Pradhan Mantri Awas Yojana (PMAY) Beneficiaries have been given land for the construction of houses.
- The land has been provided for Solid & Liquid Waste Management Projects under Swatch Bharat Mission-II



Bhakkal Properties #3:

"Properties that is not owned, claimed by any person or have been abandoned by the owner are known as Bhakkal"

Abandoned land identified under the scheme

Within the Act, the number of days for objection in case of any deviation in the map may vary from state to state. Inquiry/Objection Process for Ownership adjudication with the help of Gram sabha, land-owners, and review the existing documents and resolve any objections received from property owners through Jan Bhaagidari. Thereafter, the printing and distribution

of property cards to village household owners are owned by State. Survey of India shall also provide training and Capacity building of Revenue Department Government Officials for regular updating and usage of maps.

Stakeholders involved

In order to streamline the implementation of the scheme, clear roles and responsibilities are defined in the framework of the scheme for Ministry of Panchayati Raj, Survey of India, State Revenue and Panchayati Raj Department, and Gram Panchayats.

Ministry of Panchayati Raj is the nodal department for implementing SVAMITVA Scheme. It manages the funding and monitoring of the scheme at the Central level. The Ministry provides funding to Survey of India for the Establishment of CORS network and large-scale mapping using drones. Setting up of State Project Management Unit and IEC activities funds are released to the States. Funds are released to NIC for Development of SVAMITVA monitoring Dashboard and spatial analytical tools.



Survey of India is responsible for survey planning, execution and monitoring of survey activities and the generation of high-resolution 1:500 scale images and Spatial data. Survey of India to capture Aerial images using a Drone for Large Scale Mapping of rural Abadi area of the state. Post-processing of images generated after drone-based survey shall also be carried out by

Survey of India. Once ORI are processed, Sol to work on data processing and feature extraction to generate the first draft map. Survey of India is also responsible for the establishment of Continuous Operating Reference Stations (CORS) under the Scheme.

The States/UTs carry out the appropriate amendment to the Land Revenue Code and/or any other administrative document to grant the format of the Property Card due authority and validity. The State Revenue Department also checks the extent of activities that can be undertaken to conduct Drone surveys for the demarcation of rural inhabited areas in the State Revenue Act. States must Mark property boundaries with Chunnalines with owners and Gram Panchayat before the drone flying in the area. The department is responsible to issue notices to villages for the implementation of the scheme as and when required. State must facilitate field survey-related activities along with Survey of India so that no understanding gap. Once first draft map is submitted to the state by Survey of India, ground verification and validation of land parcel maps must be carried out by the state along with other Gram Panchayat officers. After receiving post-survey-related objections from the property owners State must finalize revenue maps and work towards the preparation and distribution of property cards so that property owners can avail benefits of the scheme

State Panchayati Raj department is responsible for organizing the Gram Sabha to intimate the schedule of the survey and post-survey correction of feature-extracted maps. It is also responsible for providing support to sensitize the villagers about the project work and its intended benefits leveraging RGSA funds for IEC etc. They are also to prepare and update the Property (Tax) Register through GPs.

The role of Gram Panchayat is crucial to the SVAMITVA Scheme as they are responsible for generating awareness among the residents of the village about the survey. Gram Panchayat must help the Panchayati Raj Department and State Revenue Department in the timely completion of the survey related activities. An officer from the Gram Panchayat must also accompany the officers of Survey of India while they are carrying



out the survey-related activities in the village. Panchayats must make available Digitize existing GP property (Tax) Registers, wherever applicable to Survey of India and Enquiry Officer for preparing interim maps/Records. Coordination of ground-level activities for conducting the survey. Panchayat is also responsible to Update property tax and asset register of the Gram Panchayat, wherever applicable and help in the resolution of the post-survey objections received from property owners. The objections may be related to corrections in owner's name, property boundaries, etc.



Property card distribution in Ramanagar, Karnataka

A Drone based fit-for-purpose mapping solution to deliver high resolution maps quickly for generation of Record of Rights for rural abadi areas

★ Pardeep Singh

Survey of India (SOI), the National Geospatial Agency is responsible for preparation, updation and maintenance of National Topographic Template, maintenance and upgradation of National Geodetic Reference Frame (NGRF) among other important themes such as Functional Boundaries, Standardised Geographical Place names, Unified Geospatial Interface (UGI), National Geospatial Data Registry (NGDR), Training & Skill development in the Geospatial field etc. The scientific surveys commenced in India with the establishment of SOI in 1767. SOI is into surveying and mapping of vast and diverse regions for more than two centuries now and have gone through various phases from paper maps to digital maps and then to enterprise GIS systems. Presently, SOI is using all latest technologies for acquisition, processing and generation of Geospatial data – such as Continuously Operating Reference Stations (CORS) network, High Resolution Satellite Imagery, Aircraft based Aerial Photography – using LiDAR and optical sensors, Drone based mapping etc. The height system of country is also being redefined – for which high precision levelling and gravity observations are being carried out. SOI as an institution has always been remarkable when it come to the scientific surveying and measurements in India – The Great Trigonometrical Survey and measurement of highest peak in the 19th century, mapping entire country on 1:50K scale in the 20th century and modernisation of Geodetic reference frame in the 21st century. Till 1905 SOI was carrying out the Trigonometrical, Topographical and Revenue Surveys. In 1905, Revenue Surveys were transferred under the jurisdiction of State Govts. In India, habitations (Abadi areas) have been rarely mapped in most of the States and no Record of Rights (RoR) exists for these areas. Non-existence of maps and RoR have excluded

In India, habitations (Abadi areas) have been rarely mapped in most of the States and no Record of Rights (RoR) exists for these areas. Non-existence of maps and RoR have excluded these areas from the formal land administration systems. In order to map abadi areas in about more than 6,62,000 rural villages in India, a national level programme (Svमित्वा scheme) was launched in the year 2020 to generate very high-resolution maps/data using Drone acquired images at a resolution of better than 5 cm. High resolution GIS and maps were generated based on which RoR are being issued to the rural citizens. SOI is the technology partner of Ministry of Panchayati Raj (MoPR) in implementation of the SVAMITVA scheme.

The broad work-stages for Drone based mapping comprises of;

1. Notification of villages for drone-based mapping by the local revenue authorities in advance to plan for the drone deployment.
2. Educating the citizens of village about the methodology and technology to be used – This process ensures that a participatory approach is adopted and the rural population is aware about the programme, surveying technology, methodology and the outcome.
3. Demarcation of properties parcel on ground and drone flying – The demarcation of properties parcel before drone flying enables the capturing of marked parcels in the images and hence reduces effort in post-drone flying activities while parcel map generation.
4. Drone data processing and GIS/map generation – The drone data processing is being done inhouse across SOI offices in stand-alone high-end machines installed with Drone data processing software. Cloud based processing has also been resorted to but sending image data from site to the cloud has been the challenge due to bandwidth limitations.

5. Ground truthing/Attribute collection – Once parcel map is generated, it is sent for ground truthing/validation and attribute data collection. Then the corrected GIS/map with attributes is provided to concerned department for initiating the enquiry process to address and resolve the objections of the property owners. Final GIS/Map generation – After completion of mandatory enquiry process parcel map is finalised and RoR are issued.

The entire workflow timeline from the stage of 'identifying the village for drone-based mapping' till 'generation of GIS and map' varies from 20 days to 35 days. The automated or semi-automated seamless workflow can bring down the workflow timeline to about 15 days. As on March, 2023 drone images have been acquired for more than 2,30,000 villages spread across the country with varying terrain. About 200+ Drones of different categories – Fixed Wing with VTOL, Quadcopters are deployed in field for Image capturing. The drones are deployed based on the Villages notified by the State Govts. In this endeavour SOI has captured more than 10,000,00,00 images at a resolution of better than 5 cm using Drones.

Drone Regulations in India: For operating huge fleet of Drones a conducive Drone policy was needed as at peak times about 300+ drones were deployed on field across the States for image data capturing. Director General Civil Aviation (DGCA), the Indian governmental regulatory body for civil aviation has notified the Drone Rules 2021. These rules are comprehensive and lucid and have been effective in implementation of the scheme.

About Drones: Drones or unmanned aerial vehicles – According to the UVS (Unmanned Vehicle System) International definition, an Unmanned Aerial Vehicle (UAV) is a generic aircraft design to operate with no human pilot onboard. Drone technology was developed initially to meet the requirements of military or defence applications such as surveillance, inspection, recce etc.

Recently, the drone platform has become common for acquiring aerial images of very high resolution. Automatic photogrammetric processes using high end computing machines have demonstrated the capability of drone platform for large scale topographic mapping.

For SVAMITVA scheme, SOI has procured own Drones of different categories – Fixed wing with VTOL, Quadcopters. Apart from SOI own Drone inventory, drone services by way of hiring drone teams from private Indian firms and empanelment of firms have also been deployed. SOI has been successful in implementing the scheme till date and will make all efforts to complete the drone flying of the targeted villages by March, 2024.

Use of geospatial data for Panchayat development Plan

★ Sushant Sudhir

India has experienced remarkable economic growth during last few decades, with significant achievements in the areas of health, education and science & technology. However, this economic growth has largely been propelled by the large metro cities and a few urban-industrial belts spread across the country. Despite significant achievements in many sectors, the rural areas still continue to face challenges such as unemployment, poor infrastructure, low per capita income and consequent low standards of living, adding to it, most of the rural settlements which are majorly characterized by haphazard and unplanned growth; non-conforming land uses; unplanned land conversion from agriculture to other land use etc., resulting in environmental degradation and poor quality of life.

The rapid unplanned and unauthorized development sprouting up in the villages has also been witnessed, specifically in the peri-urban areas, in the extended Abadi (residential) area of the village, and in panchayats located on National Highways. If they are introduced in the urban area limits or in the notified area of the Development Authority, they have to be later regularized and retrofitted with the help of Urban Spatial Planning interventions like Master Planning. The unplanned Abadi areas of the villages (called Lal Dora) which are already inhabited become very complex for further development. Lack of exact property records in the Abadi Areas of the villages is one of the primary reasons for this unorganized development and should be resolved through spatial planning interventions in rural areas.

The Panchayats which constitute the third tier of government in the rural areas and have been specifically mandated by Article 243G of the Constitution for planning for economic development and social justice within their respective areas. However, in their present set-up, the Panchayats neither have the means nor the capacity to undertake such an effort.

With introduction of SVAMITVA Scheme the property parcel records of Abadi Areas are being created and high-resolution maps are being made available with the help of GIS. The scheme is proving to be a steppingstone and the data from it can be used for Spatial Planning and augmentation of OSR, thus will empower the Panchayats.

Geospatial technology has been driving inclusion and progress. Take our SVAMITVA (Survey of Villages and Mapping with Improvised Technology in Village Areas) scheme, we are using drone to map properties in villages. For the first time in decades, people in rural areas have clear evidence of ownership- Shri Narendra Modi, Hon'ble Prime Minister

The Spatial Planning system framework as defined in India, constitutes of majorly of the Spatial Planning aspects at different levels and have legal backing on which it abides (statutory provisions). The different levels at which spatial plans can be prepared are:

Perspective Plan: Long term Perspective Vision Document (20-30 years' timeframe)

Regional Plan: Defines Region and Regional resources (20 years)
Development Plan: District Development Plan, Master Plan (10-20 years; review every 5 years)

Local Area Plan: Town Planning Schemes, Sub-City Plans (5-20 years)
Spatial Planning is the major tool for land management, providing detailed land use allocation for the sustainable development of city/region in the form of Master Plans and is extensively used for Planning in Urban Areas. Most of these Spatial plans are made for 10-20 years period, in phases of five years for periodic review and revision.



The preparation of the Spatial Plans is an exhaustive process. It involves lots of data collection and condition analysis along with community participation in form of stakeholder consultation. The preparation of Spatial Planning includes:

The Spatial Planning of the area is multi-disciplinary in nature, taking into consideration the quality of life of people and all the interrelationships between various aspects; it encompasses various disciplines of studies like social aspects, economics, environment, engineering, architecture etc. It's based on the 'Community Participation' and lead by a 'Vision' for development. The Enforcement and Land Development happen as per the finalized Spatial Plan Document.



While the Spatial Planning for Urban Area is a Statutory Instrument, supported by Town and Country Planning Acts in most States, in Rural Area, neither the existing planning framework has spatial planning approach nor there is, statutory provision exclusively for spatial plans for Gram Panchayat.

Role of Panchayats

The Panchayats, being institutions of Rural Local Governance (established at Panchayat, Block and District levels) provide the interface between the people and the government machinery. They thus have the responsibility to adopt Spatial Planning as a tool for promoting economic development and sustainable livelihoods in rural areas and functioning as the drivers of economic growth for the country. Therefore, it's a natural corollary for the Panchayats to be capacitated to take over the larger canvas of local economic development in all spheres amongst their constituent villages, much in a manner similar to the spatial developmental planning undertaken by the Urban Local Bodies in India.

Initiatives of MoPR for carrying out Spatial Planning in Rural Areas

The present initiatives by the MoPR have focus on the spatial planning and integrating the same with the Gram Panchayat Development Plans (GPDP). MoPR has revised the Rural Area Development Plan Formulation and Implementation (RADPFI) Guidelines for streamlining the rural development standards. The guidelines insist on connectivity, environmental aspects, and superimposed standards of infrastructure on village land use plan. The objectives of the guidelines are:

Development Plan Formulation and Implementation (RADPFI) Guidelines for streamlining the rural development standards. The guidelines insist on connectivity, environmental aspects, and superimposed standards of infrastructure on village land use plan. The objectives of the guidelines are:

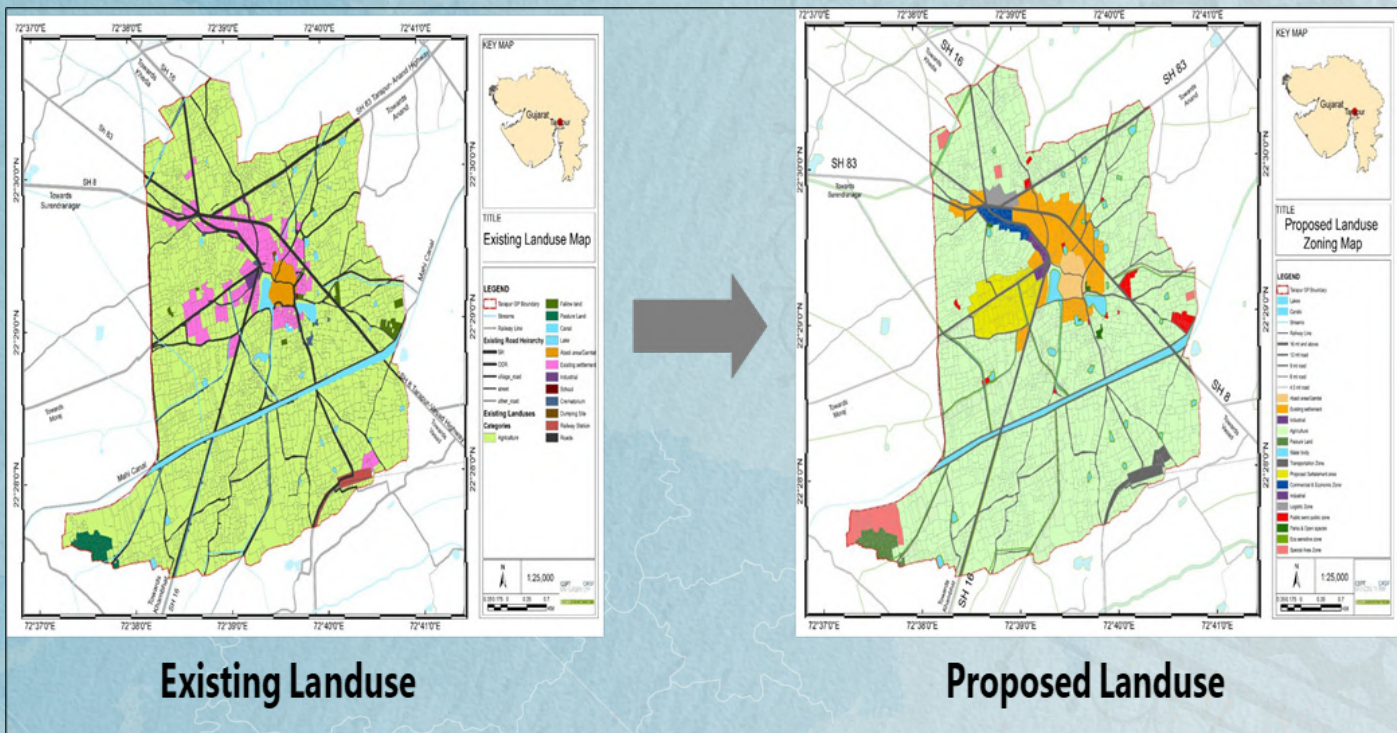
1. To arrive at spatial standards for Rural/Gram Panchayat development,
2. Contains norms and standards to help providing infrastructure facilities and amenities in rural areas,
3. To recommend institutional framework for operationalizing the guidelines and provide a road map for planned

development of Gram Panchayats. In the last decade, Geo spatial technologies such as global satellite navigation systems (GNSS), geographic information systems (GIS), satellite remote sensing (RS) etc., have gained significance in rural planning at micro and macro levels.

SVAMITVA Scheme implemented by MoPR is one such initiative and is a scheme of national importance as it is providing the 'record of rights' to the property owners in the Abadi areas, which were not available before. Under SVAMITVA Scheme, extents of the Abadi areas are identified, drone surveys are carried out of the Abadi areas of the villages, feature extraction of the assets are being carried out on GIS platform and property cards are made and distributed to the property owners of the villages. The property owners can financially monetize their properties and take advantage of bank loans for various purposes including setting up or expansion of their business as well as better construction of their properties. This is not only bringing down the dispute rates in rural areas but also a data base is being created, which will further help in carrying out spatially planning as well as development works in the Abadi Areas.

With the help of introduction of Development Control Regulations in the Panchayats, the unorganized development can be formalized. Further, with introduction of Building Permission System not only the new buildings can be ensured with safety and better designs but also it will help in creation of Own Source of Revenue (OSR).

The Ministry of Panchayati Raj had prepared 34 Gram Panchayat Spatial Development Plans (GPSDP) with the help of 17 partner Planning and Architecture Institutions like SPA, CEPT, NITs, IITs and other institutions of national repute across 14 States in India. The prepared GPSDPs have proved to be a steppingstone in better understanding the selected 34 Panchayats existing conditions, identifying the issues related to the service delivery of the infrastructure (physical as well as social), projecting various needs for the upcoming 10-20 years and based on the projections the projects required to be taken up in a phase-wise manner for better development. The prepared plans were based on the Spatial analysis of various parameters, preparation of base-map, surveys, etc.



Existing Landuse

Proposed Landuse

Pursuant to this initiative, it is expected more Gram Panchayats would be able to draw up Spatial Plan of their villages clearly demarcating areas for agriculture, residence, local markets, parks, water bodies, agro-based industries, MSMEs institutional areas such as bank, post office, Anganwadi, PHC, school, transport infrastructure, creating green public spaces, and improving rural planning and management in participatory and inclusive ways. A strong planning will strengthen the decision-making process regarding the use of scarce resources for an effective development strategy. An important outcome of such a planning process inter alia will also be the demarcation of a clear roadmap for immediate and future sources of Own Sources of Revenue (OSR) for the GPs making them self-reliant. The prepared Spatial Plans will aim to provide systematic planned infrastructure development, prioritizing local needs of the Panchayats, resource management, environmental protection, effective distribution of facilities and seeks to promote decentralised planning with strengthening of local identity create a framework for future policy decisions. This will suffice the Sustainable Goal 11 of the Sustainable Development Goals (SDGs) which is about "Sustainable Cities and Communities". This spatial planning exercise would provide guidance to land-owners, developers and Government authorities to promote open and democratic planning.

Since, the rural areas are actually the sprouts of development, which when given conducive environment to grow will tend to develop, but to nurture them we need to give them a right directions/patterns for growth. The direction should incorporate all the sustainable practices which should be able to conserve the available rare resources, especially the land, while utilizing all the growth opportunities in rural area, which surely will tend to improve the quality of life of its residents. Hence, along with the conventional development methods, the Spatial Planning will surely serve as the roadmap for future development, which will utilize many potentials, unlock various new opportunities and solve many problems of the Rural India. The efforts put up by MoPR indicates their continuous and rigorous commitment to improve the quality of life in rural areas and strengthening the role of Gram Panchayats by empowering them and making them self-reliant. Further, a strong reform in this direction will surely make the Gandhi Ji's vision of "Gram Swaraj" possible.

Sustainable Development Goals No. 11

11 SUSTAINABLE CITIES AND COMMUNITIES



"Make cities and human settlements inclusive, safe, resilient, and sustainable"

Sustainable Cities And Communities

Women's Empowerment through Co-ownership in the Property Cards created under SVAMITVA Scheme

★ Abhas Vyas

Globally, women own less land and have less secure rights over land than men. Women make up on average less than 20 percent of the world's landholders, but make up an estimated 43 percent of the agricultural labour force.²

Land reforms, allocation, and titling or registration programmes often target the household, or assign ownership to the "head of household" most frequently defined as a man. Because women are typically not considered as land-owners or farmers, they are usually excluded from extension and support programmes and financial credit and loans which are necessary for effective use of land. In the absence of secure land rights, women become vulnerable to various societal anguish and often lack recourse. In contrast, when women do have secure rights to land, myriad benefits tend to follow.

Stronger women's rights to land and productive assets are linked to enhanced status, improved living conditions, better nutrition and food sovereignty, improved health and education outcomes, higher earning and individual savings, and better access to credit, as well as better protection from gender violence.³

Furthermore, the United Nations Sustainable Development Goals (SDG) Goal 1- Sub Goal-1.4.2. measures the results of policies that aim to strengthen tenure security for all, including women and other vulnerable groups and provide global guidance to governments on women's land rights in law and in practice. In order for women to be able to enjoy their land rights in practice, States must urgently change those laws and social norms which impose barriers to women's right to own and access to land.

Madhya Pradesh has made provision in Madhya Pradesh Land Revenue Code 1959 to make it mandatory to include name of women co-owners in property cards (Adhikar Abhilekh).

Pune Zila Parishad undertook a special drive over 8 months to encourage women's ownership over the property.

88% of residential properties in Pune district (8.15 Lakhs of the 9.27 Lakh) are now jointly or solely owned by Women Members of the Household. It was 16% when the drive began.

The ownership of property by women provides them with a sense of security and supports them to borrow from banks to establish enterprises and for other purposes, etc.

SVAMITVA Scheme has provided an unprecedented opportunity to the States to amend their land acts and include co-ownership of women in property cards. Ministry of Panchayati Raj has also issued advisories to States to include women as co-owners while collecting ownership details under SVAMITVA Scheme and as per responses received from States, 13 states have provisioned for co-ownership of women in property cards.



The Adhikar Abhilekh received through SVAMITVA Scheme has helped us secure our land in the village"
- Smt. Shaliya Siddiqui,
Harda, Madhya Pradesh



Property Cards received through SVAMITVA Scheme will help us secure loan from Banks. Disputes related to property have reduced as well"
- Smt. Garima Soni, Resident,
Harda, Madhya Pradesh



A step towards achieving Gram Swaraj and making India AtmaNirbhar

★ Shivam Ranjan

Property cards distributed under the SVAMITVA Scheme has transformed the life of rural population in India by helping them realize the actual benefits of the Scheme. Eradicating the long persisting concern of a valid land ownership document for rural population after decades, the Scheme has taken in consideration the generation of Property cards that can be used as an authentic document for availing loans from banks and reaping other financial benefits by the beneficiaries. The rural people can build the houses on their properties to increase the value of their properties for sustainability. The citizens can lease or sold out their property under the rights provided through SVAMITVA Scheme.

“Independent India should be “vocal for local” and citizens should glorify Indian products to promote ‘Atmanirbhar Bharat’. While we focus on economic growth and development, humanity must retain a central role in this process and our journey,”

-Shri Narendra Modi

The Scheme has been designed keeping in view the generation are provided with a flush of learning opportunities to individuals for becoming self-reliant and self-sufficient to perform work activities independently and lead a better quality of life. There are several instances under the Scheme embraced by various stakeholders to give rise to employment across all aspects of the Scheme activities to encourage and promote the mission of being AtmaNirbhar.

Skilling of state officials on scheme process

The Scheme framework involves carrying out the extensive exercise of verification of maps by the State departments from the phase of generation of drone images to Printing of final Maps.

Multiple iterations are done in coordination by the Stakeholders to ensure the correctness of final maps before the preparation of property cards. The Demarcation of properties is required to be checked thoroughly by the Patwaris. This requires extensive and proper training to be imparted by Survey of India along and the State to the patwaris at district level for checking the feature extracted maps generated after completion of drone flying. This allows the State officials and patwaris to utilize the map skills across other engaged projects and sectors.



Training of pilots for drone survey

Survey of India is regularly giving Pilots training to the in-house manpower and personnel under the Scheme. This has led in development of drone operating skills of the Survey of India workforce in alignment with the vision of Mission.

Training of state officials regarding use of CORS:

CORS has various industry applications in various sectors that can be utilized by the concerned departments. It has an advantage of providing accurate Geo-referencing, ground truthing and demarcation of lands.



Survey of India is also conducting sessions for providing information on use cases of CORS technology to the State departments. This would facilitate development work in Gram Panchayats like road construction, irrigation and infrastructure etc.

Employment Opportunities created under the Scheme

Hiring of Digitizers by Survey of India

The Digitizer has an important role in generation of drone images through data processing, feature extraction, updating attribute information and incorporating the corrections in the final maps. SVAMITVA Scheme created a pool of employment opportunities for digitizers for covering up the extensive number of villages under the Scheme within the timelines. Survey of India has set up its offices at State level where substantial number of digitizers are hired to fast track the Implementation activities in consultation with the State departments.

Hiring of Manpower by States

Under the Scheme, Some States have increased their own manpower including young professionals and retired officers at State level in order to expedite the Scheme activities like ground verification of maps, Inquiry for finalization of maps producing lot of employment opportunities under the Scheme.

Outsourcing of Scheme Work to Private agencies

The Scheme covers broad activities and targets to be covered within the defined timelines. There was an utmost need for Survey of India to outsource the Scheme work to other domain agencies to keep up the balance between the targets and the set timelines.

activities like Drone Flying, Generation of Drone maps was outsourced to private agencies generating large number of employment and business windows for private and Start-up firms for their establishment in the market.

Hiring of MNREGA workers

Some States have hired MNREGA workers for carrying out chuna marking in villages before commencing drone flying in the villages. This activity involves deployment of large manpower to cover up and chuna marked the large number of abadi villages.

Establishment of Project monitoring units

The Scheme entailed setting up of project monitoring units at the State and Central levels for better monitoring of SVAMITVA implementation and its key performance indicators. The PMU is responsible for supervision of overall progress of the implementation and stakeholder coordination including facilitating awareness and providing the handholding support. The deployment of PMU at central and State levels has increased employability across all States in parallel to yielding business opportunities to consulting firms.

Technological Transformation under the Scheme

An automated, collaborative, and participatory land administration system shall be made possible by integrating cutting-edge technology, such as Internet of Things, Artificial Intelligence, Machine Learning etc. with geospatial data and technology to address the changing challenges associated with the dynamic and ever-expanding landscape of land administration. There are number of technological upgrades encapsulated under the Scheme to enrich the data ecosystem. The scheme aims for creating accurate land records, reducing property disputes, accurate determination of property tax in Gram Panchayats (GPs), develop maps to aid in panchayat-level planning and preparation of better-quality Gram Panchayat Development Plans by making use of GIS technology and maps.

Upgradation in Survey Infrastructure: There has been a transformation in survey technology from DGPS Survey (using prisms) to adoption of modern CORS Survey (using Rovers).



The Scheme has incorporated the updated survey technique of CORS for attaining better accuracy in positioning and consuming less time in carrying out the field surveys.

Survey of India is establishing the National CORS Network under the Scheme across the country. With better positional accuracy of better than 5 cm, the setting up of Nationwide CORS network will have wide ranging ramifications and use cases for every sector viz Agriculture, Infrastructure, Roads, Power, Utilities, Irrigation, Railways and Telecom along with preparation of Detailed project Reports (DPR) and other reports.

Transition from Satellite Image Procurement to drone survey technology:

The Scheme involves carrying out the large-scale mapping using drone technology. The shift from using Satellite images to drone surveys for capturing better resolution images of rural abadi areas has been one of the highlighted technology transformations in rural India.



High-resolution Villages maps can serve for feature extraction of all visible features such as buildings, roads, land parcels, water tanks, open plots, etc. for preparation of base map layers. Enhancement in image resolution: Large Scale Mapping is carried out across India and high-Resolution data maps of 5 cm spatial resolution are created under SVAMITVA to generate accurate maps for the rural Abadi area to confer ownership property rights



High-quality Survey Grade Drones used in survey activities enable the generation of maps on a scale of 1:500 with high resolution images of 5 cm accuracy for surveyed areas.

Generation of 3D Village maps: Drone survey under the Scheme captures the height component of the ground features as a part of raw data and generates the DEM (Digital Elevation Models) of 20 cm vertical accuracy for the surveyed Abadi villages that could be used to determine terrain attributes such as elevation at any point, slope and in infrastructural management, hydrology & flow-direction studies, land-use planning and for contouring Topographic maps.



DEM Profile created can demarcate the relative heights of all village features & would help in the creation of high informative 3D Maps at the village level for the panchayats across India.

Updating of Map records The Scheme provides an opportunity for States to update the outdated cluttered maps to digital maps generated from the enriched SVAMITVA data. This would help in updating the map records that is more presentable, clear and informative.



The efforts and contribution made through SVAMITVA Scheme in streamlining land management shows the steadfast dedication to raise the standard of living in rural regions and enhancing the function of Gram Panchayats by giving them numerous opportunities to grow their skills along with providing employability across the nation at various levels to make citizens "self-reliant" and "self-sufficient". The Scheme has encapsulated the technological advancement in the framework for better Planning and development of Rural India.

Self-Reliant Panchayats Augmenting Own Sources of Revenue of Gram Panchayats through accurate assessment of Property Tax using SVAMITVA data

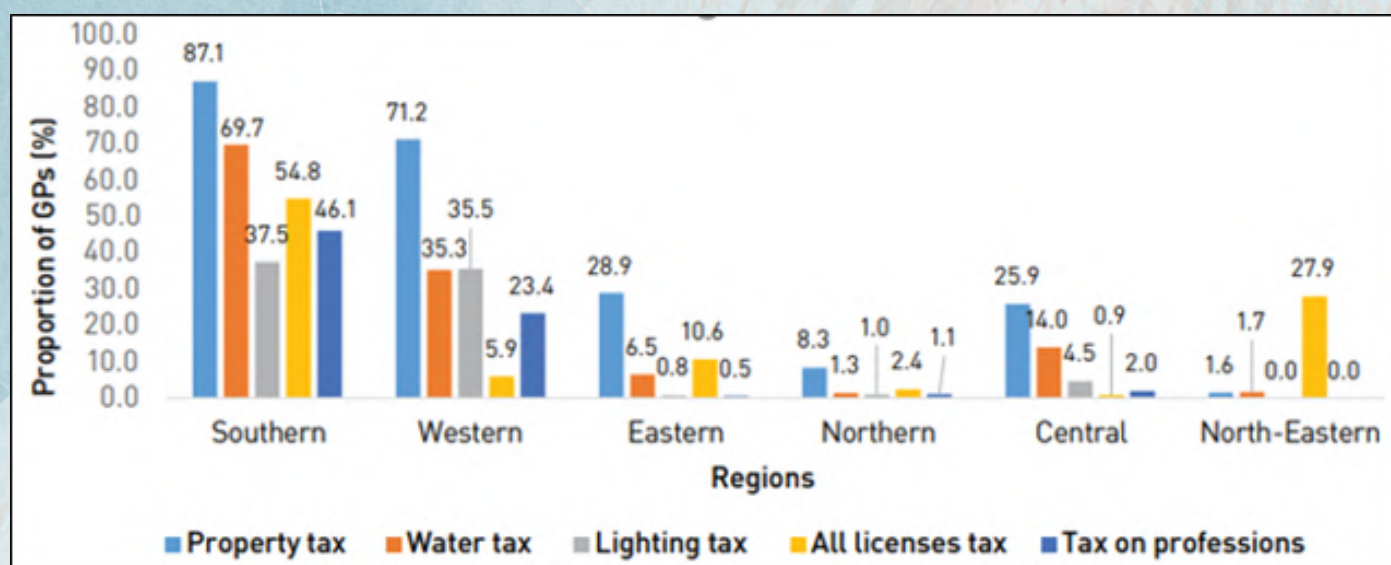
★ Vatsalya Malviya

Panchayats in India, which are institutes of local self-governments, have several sources of financing to carry out their functions and responsibilities. One of the critical sources of financing for rural local bodies is Property Tax and under the Article 243 (H) of the Indian Constitution the power to levy property taxes is vested with the state governments and local authorities. Property tax is levied by the local government bodies, such as the gram panchayat or municipality, on properties owned by individuals or entities. In rural areas, property tax is usually levied on agricultural land, residential properties, and commercial properties. The rate of property tax varies from state to state and is determined by the local government.

Need for streamlining of Property Tax

Property Tax in Rural India varies widely across different states and municipalities. Property tax collection can generate significant revenue for rural local bodies, which can be used to fund various initiatives and infrastructure development programs. This can lead to better living standards, improved healthcare, education, and transportation facilities, among other benefits.

The tax collection can incentivize local governance, as it encourages local bodies to work towards the development of their respective areas. The revenue generated from property tax can be used to fund initiatives that benefit the local population, leading to better living conditions and overall development of rural areas. The collection can empower local communities, as it enables them to contribute to the development of their areas. It can be used as a tool to increase community participation and engagement in local governance, leading to greater accountability and transparency in decision making.



The above diagram shows that India has Property tax to GDP ratio one of the lowest among G20 countries. To make India truly Atmanirbhar, determination of Property Tax is needed which would accrue the Gram Panchayats directly in the States where it is devolved.

Also, the Fifteenth Finance Commission has estimated the house tax potential for rural and urban areas separately for all States using the unit level data from NSSO Seventy Sixth Round on Drinking water, Sanitation, Hygiene, and Housing Conditions conducted in July–December 2018 (DWSHH 2018). It is estimated that the collection of house taxes in rural areas relative to their potential in select five states viz Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, and Uttar Pradesh averaged about 20%. The overall potential for house tax collections derived at the 2019 prices is Rs. 42,160 crores for rural areas. Thus, panchayats have a large potential of increasing their own source revenue by improving the collection of property tax.

Challenges of collecting Property Tax in Rural India:

In many rural areas, property records are incomplete, outdated, or non-existent. This makes it difficult to identify the properties that need to be taxed. Tax compliance in rural areas is often low due to a lack of awareness, limited enforcement, and the perception that taxes are not beneficial to citizens. Rural areas lack basic infrastructure, such as roads and electricity, which can make it difficult for local authorities to collect taxes and enforce tax regulations. Rural areas often have limited financial resources, which can affect their ability to invest in tax collection infrastructure, such as technology and staff training.

Recently in the Economic Survey it was highlighted that India's Property tax collection is much lower than the OECD countries. The Urban property Taxes are subject to 0.2 % of the GDP and Rural Property tax are almost half of it.

These areas often have limited staff to manage tax collection, which can result in inefficiencies and delays in the tax collection process. In some cases, property tax collection is managed by multiple authorities at different levels of government, which can lead to confusion and delays in the tax collection process.

Addressing these challenges requires a multi-pronged approach, including improving property records, increasing tax compliance through public awareness campaigns, investing in infrastructure and staff training,

and streamlining tax collection processes to reduce inefficiencies. Local government officials also need to work closely with community leaders to build support for property tax collection, emphasizing the benefits of increased revenue for local development initiatives.

SVAMITVA scheme and its benefits:

One of the key benefits of the SVAMITVA scheme is that it enables property owners to obtain property rights, which can then be used to access credit and other government schemes. The Gram Panchayats can also use these records to accurately assess property taxes, which is essential for the development of rural areas.

States that may benefit from the SVAMITVA scheme in terms of Property Tax:

- **Karnataka:** Karnataka is one of the states that has implemented the SVAMITVA scheme. The digital maps prepared under the scheme can enable the government to identify the exact boundaries of land parcels and calculate the correct amount of property tax. The State has also come up with an initiative **E-SWATHU** to create ownership records for rural non-agricultural properties in an incremental approach, which can be used for transacting properties and assist Gram Panchayats in tax collection.

- **Andhra Pradesh:** State collects property tax through **Digital Panchayat portal**. The portal hosts database of all the households in the Gram Panchayats of the State. Through the application, panchayat/citizens can raise the demand, and collection of tax can subsequently be done.

- **Madhya Pradesh:** Madhya Pradesh has also implemented the SVAMITVA scheme and may further use the digital maps prepared under the scheme to collect property tax from landowners. The maps have enabled the government to identify the properties and further calculate the tax amounts accurately.

The State has also developed its own online portal for collection of property tax called as **Svakardhan Prabandhan Pranali** which is also integrated with Samagra database. 7.79 lakh households have registered on the property tax portal. INR 30.30 Cr tax has been levied out of which INR 9.03 Cr has been collected.

Himachal Pradesh on the threshold of SVAMITVA

★ Dr. Rajeev Bansal

SVAMITVA, a Central Sector scheme, aims to provide an integrated property validation solution for rural India. The demarcation of inhabited land in rural areas is undertaken with use of drone technology in collaboration with the efforts of the Ministry of Panchayati Raj, State Revenue Department, State Panchayati Raj Department and Survey of India.

Status of Scheme in HP

In Himachal Pradesh, a total of 15196 villages have been identified for coverage under the scheme. The technical assistance is being provided by Survey of India for the implementation of SVAMITVA Scheme. The process of drone flying was first started in District Hamirpur with the help of Survey of India (SOI) and drone flying is in progress in all the districts except District Kullu. The Government of India is providing funds through the Survey of India (SOI) funds which are being provided to state at the rate of Rs. 500 per village by the Central Government for IEC activities. The additional provision of funds can also be made for IEC from the Rashtriya Gram Swaraj Abhiyan (RGSA). During the Chuna marking of Abadi deh village, the provision of funds for the cost of labour and material has been made from MG NREGA, 15th Finance Commission and Rashtriya Gram Swaraj Abhiyan (RGSA). The target of March, 2024 has been set by the Government of India for the completion of the SVAMITVA Scheme. In financial year 2023-24. As per the latest information, out of total 15196 Abadi Deh Village in H.P., extensive mapping has been completed as per detail given below:

(Villages in No.)

Sr. No	District	Total abadi deh villages	ISM Completed in villages
1.	Bilaspur	829	358
2.	Chamba	1069	88
3.	Hamirpur	1505	1505
4.	Kangra	3156	274
5.	Kinnaur	157	36
6.	Kullu	378	4
7.	Lahaul –Spiti	217	95
8.	Mandi	2574	286
9.	Shimla	2036	173
10.	Sirmaur	724	260
11.	Solan	2025	613
12.	Una	526	405
	Total	15196	4097

One drone team is working each in District Chamba, Kangra and Kullu and two teams each are working in District Bilaspur, Mandi, Shimla, Solan and Sirmaur; total 13 drone teams are working in the State. 119 villages (having 1285 beneficiaries) are ready for property card distribution in District Hamirpur. In addition, maps in 354 villages have been displayed for inviting objections in District Hamirpur. Camp Office at District Mandi has started working. Besides this, the approval for setting up the camp offices at Kangra and Shimla has been accorded and will be functional by the end of financial year 2022-23. To further facilitate the initiative, SVAMITVA dashboard on RMS Portal has been designed to monitor the progress of various components of SVAMITVA Scheme.



HP State NIC has initiated the process of designing the module for generation and updation of Records of Rights (Property Card) and it will take approximately one month time. Generation of Property Cards will be started for 1st April, 2023. Hon'ble Chief Minister, HP in his budget speech for the year 2023-24 has announced that the work will be accomplished within this financial year and property cards will be distributed in the State. The detailed status has been presented in the table given below:

Sr. No	District	Abadi Deh Villages	Outer Boundary Demarcation (Completed)	Large Scale Mapping	1 st Stage Maps Collected from SoI Villages	Villages Ground Truthing (Completed)	Village (Maps displayed in GP/Pa twar Khana)	Final Maps /3 rd Stage Maps Collected Villages	Status of Drones	additional drones require villages / drone/day) to complete by 30 th June, 2023
1.	Bilaspur	829	829	358	76	0	0	0	2	0
2.	Chamba	1069	1069	88	0	0	0	0	1	2
3.	Hamirpur	1505	1505	1505	1469	1028	354	119	0	0
4.	Kangra	3156	1011	274	0	0	0	0	1	9
5.	Kinnaur	157	157	36	26	0	0	0	0	1
6.	Kullu	378	190	4	0	0	0	0	0	1
7.	Lahual – Spiti	217	217	95	63	0	0	0	0	1
8.	Mandi	2574	2574	286	0	0	0	0	2	6
9.	Shimla	2036	2036	173	0	0	0	0	3	5
10.	Sirmaur	724	719	260	127	0	0	0	2	1
11.	Solan	2025	1905	613	0	0	0	0	2	2
12.	Una	526	524	405	192	0	0	0	0	1
	Total	15196	12736	4097	1956	1028	354	119	13	29

Way forward

- **Better planning:** The creation of accurate land records and GIS maps will support Panchayats in the preparation of a better-quality Gram Panchayat Development Plan (GPDP).
- **Land revenue management:** With this, Gram Panchayats can better streamline their property tax determination and collections in States:
- **Revenue generation:** This will lead to the generation of their own sources of revenue which could be gainfully utilized for various developmental works.
- **Boost to drone industry:** The Scheme has also given an impetus to the drone ecosystem in the country.

Conclusion

In conclusion, the SVAMITVA scheme is an important initiative of the Modi government aimed at providing legal property rights to rural landowners in India. The scheme has the potential to significantly improve the economic conditions of rural communities by unlocking the economic value of their land assets. Thus, SVAMITVA Scheme aims for holistic development of Gram Panchayat through the empowerment of villages and their residents which will eventually make rural India Atmanirbhar.

Union Minister of State for Panchayati Raj Shri Kapil Moreshwar Patil releases Report on Panchayat Development Index



Report on Panchayat Development Index was released at the hands of Union Minister of State for Panchayati Raj Shri Kapil Moreshwar Patil at National Workshop on Panchayat Development Index (PDI) on 28 th June 2023.

More than 250 participants including Senior Officers of different Ministries and Departments of Government of India, Principal Secretaries along with the Senior Officers of the Departments of Panchayati Raj, Rural Development, Planning & Statistics and Programme Monitoring, Directors of SIRD&PRs, Senior Technical Officers of State NIC and Officials of SDG Cell and other key stake-holders participated in the National Workshop on Panchayat Development Index.

The main focus of the National Workshop was to develop strategic plan and roadmap on integration of Ministry's portal /dashboard to build data ecosystem, assess the schematic progress in alignment with LSDGs at Panchayat and institutional mechanisms for implementation of the Panchayat Development Index with active support of different Ministries/Departments, Panchayats and Knowledge Partners. The National Workshop was well received and proved to be remarkably effective at bringing all the stakeholders on board for paving the path for building robust mechanism for evidence based development at all levels.

In his address to participants, Shri Patil underlined that the Central Government under visionary leadership of Prime Minister Shri Narendra Modi has intensified its efforts during the last more than nine years to support the Panchayati Raj Institutions (PRIs) in the best manner possible to ensure that the basic objectives of the Panchayati Raj are achieved in true letter and spirit. We have witnessed a quantum leap in the allocation of fiscal resources to Panchayati Raj Institutions to support various infrastructure requirements and developmental activities in rural areas. A series of pro-Panchayat initiatives have ushered in a new era in which Panchayats can come forward to decide their own destiny.

Addressing the National Workshop, Shri Kapil Moreshwar Patil stressed that all-around development and transformation of villages is not possible without the support of all stakeholders. He emphasized that there is a need to work collectively in the right earnest to continuously encourage and incentivize the Panchayats in order to achieve the Sustainable Development Goals (SDGs) in rural areas within a definite time frame. The Union Ministers said, there should be healthy competition among the Panchayats on the parameters of overall development. He expressed that Gram Panchayats should also extend help to each other so that every Gram Panchayat moves ahead together on the path of progress and prosperity.

Shri Sunil Kumar, Secretary, Ministry of Panchayati Raj highlighted the need of evidence based Development Goals at all levels through Panchayat Development Index while addressing the National Workshop on Panchayat Development Index, and said that the Panchayat Development Index is a logical combination of various steps that we are taking for years, if Panchayats decide to attain the Sustainable Development Goals then they will find resources for it; lot of developmental work took place in past one and a half years.

Smt. Jayashree Raghunandan, Former Additional Chief Secretary, Government of Tamil Nadu & Chairperson of the Committee on PDI said that data holds utmost importance for this entire process, data collection must be easy and simple, and training and capacity building crucial for data collection.

Smt. Radha Ashrit, DDG, DMEO, NITI Aayog & Member of PDI Committee, Dr. Mallinath Kalshetti, Director, SIRD & PR, Maharashtra, Smt. Aditi Das Rout, Additional Secretary, Ministry of Women & Child Development, Shri Amit Shukla, Joint Secretary, Ministry of Rural Development, Shri Sunil Jain, DDG, NIC, Shri V. Hedge, DDG, Department of School Education & Literacy, Ministry of Education, Shri Samir Kumar, Economic Advisor, Department of Drinking Water & Sanitation, Ministry of Jal Shakti, Dr. Govind Bansal, Director (Maternal Health), Ministry of Health & Family Welfare, Shri Rajesh Gupta, Director, NITI Aayog, Dr. Sanjay Kumar, Director, Ministry of Statistics & Programme Implementation and other senior officers of Government of India and State Governments shared their views and insights and enriched the deliberations during the National workshop.



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