

Proceedings of the Two-Day National Conference on SVAMITVA Scheme and Rural Planning

A two-day National Conference on SVAMITVA Scheme and Rural Planning held on the 3rd and 4th of November 2022 at Bhopal, Madhya Pradesh. The conference was presided over by the Secretary, Panchayati Raj with participation from States & UTs – Revenue and Panchayati Raj Departments, Survey of India, Industry Experts, Research Institutes, and Elected Representatives from Zilla, Block, and Gram Panchayats. The list of Participants is **Annexed**.

2. The discussion at the conference was divided into five sessions over a span of two days. Day 1 focused on the Overview of the SVAMITVA Scheme and the launch of the 'Expert Committee Report' on the SVAMITVA Scheme, breakout sessions on 'Land governance' and presentations on 'Property Tax' by Karnataka, Maharashtra followed by State-wise presentations. Day 2 covered aspects of 'Continuously Operated Reference Stations (CORS)' and their use cases, 'Future updation using Rovers', requirements for setting up of 'Command-and-Control Center', and sessions on the 'Rural Spatial Planning'. There was extensive participation from PSUs and participants from various States during the Question-and-Answer session moderated by Lt Gen. Girish Kumar (VSM) (Retd.), Chairman Handholding and Monitoring Committee of SVAMITVA Scheme. Inputs were also provided by experts from Google, Survey of India, and I.I.T Indore on the utilization of SVAMITVA data generated. Deliberations also included utilization of SVAMITVA data for Rural Planning wherein inputs were provided by premier planning and architecture institutes and elected representatives also shared their experience in respect of the Pilot Project undertaken for Spatial Planning in their respective Gram Panchayats (GPs).

Session I (SVAMITVA Scheme)

Welcome address by Shri Alok Prem Nagar, Joint Secretary, MoPR

- i. Joint Secretary, Panchayati Raj welcomed all the participants- Elected Representatives (ERs) from Zilla, Block and Gram Panchayats, State Panchayati Raj Department, State Revenue Department, Survey of India, State line Departments, Allied Industry experts, NIC and other stakeholders. He mentioned that the conference is an effort to bring all the stakeholders on the same platform and provide

- specific inputs pertaining to their area of expertise so that the learnings from the workshop can be implemented on the ground.
- ii. Two-fold objectives are being achieved- understand the progress so far and disseminate learnings from the scheme implementation in various States/UTs and means of realizing larger outcomes of the scheme. Panchayat departments are the key beneficiaries of the scheme who would be using the SVAMITVA Scheme data for the developmental plan of panchayats and increasing OSR for GPs wherever devolved. The State Revenue Department is the key implementing agency at State Level and must interact with other States to know of the end-to-end automation systems developed as well as online mortgage facility on Abadi land, among others. State Line departments would learn of the benefits of the CORS network in their projects.
 - iii. He also encouraged the States to get key takeaways from the workshop so that the department and other stakeholders can benefit.

Keynote address by Dr. Sanjay Goyal, Secretary, Revenue Department, Government of Madhya Pradesh

- i. Secretary, Revenue welcomed all the delegates and participants.
- ii. He apprised about the status of the implementation of the scheme: MoU was signed in June, 2020 and as of now all 52 districts are covered. 'Adhikar Abhilekh' is being prepared electronically and provided legal status under State Acts and Rules. He also apprised about the benefits of the 'SAARA' application. 'Samagra' application database has helped integrate demographic data into SVAMITVA database which has saved a lot of time and effort for the state. 'Adhikar Abhilekh' has integrated Unique Land Parcel Identification Number (ULPIN) and is available on the MP State 'Bhulekh' portal digitally.
- iii. MP State is targeting to complete the drone survey by Dec'22 and by Dec'23 all property cards are targeted to be prepared. In an event, in October 22, at Harda, Hon'ble Prime Minister Distributed Property Cards to the beneficiaries of 19 districts. Also, National and State level programs were conducted to distribute property cards to the beneficiaries. The Record of Rights (ROR) can be used to avail bank loans and settlement of disputes.
- iv. He emphasized that the State is committed to achieving scheme targets. He thanked the Ministry of Panchayati Raj for organizing the national workshop at Bhopal.

Keynote address by Shri S. Chockalingham, DG, YASHADA

- i. Shri S. Chockalingham provided a historical perspective, wherein the limitation of the manual survey was highlighted and the long duration it took to survey and prepare maps of the country during the British era.
- ii. A brief about the precursor to SVAMITVA was also provided by him wherein, Maharashtra took up a pilot project to perform a drone survey to create maps of the villages. This was made possible through collaboration between the Rural Development Department, the City Survey Office and Survey of India.
- iii. Through initial trial and error method, that lasted 6 months, the drone model was finalized and PoC (*Proof of Concept*) was successfully completed as a result SVAMITVA Scheme is one of the biggest land surveys as well as reform is undertaken anywhere in the world. An accuracy of $\pm 9\text{cm}$ was achieved through the initial Proof of Concept (POC) which is far better than a manual survey that had an accuracy of $\pm 25\text{cm}$ for rural areas and $\pm 12.5\text{ cm}$ for urban areas. It is the first time that the x, y, and z coordinates of points are being captured.
- iv. The second innovation that has occurred using drone survey was using the chuna line for demarcation directly without going from point to point to create maps. The scheme has led to the settlement of disputes as the possessions on the ground are converted to Record of Rights. (*Factum of Possession*)
- v. He highlighted that it is the time to make use of the offshoots of SVAMITVA Survey like CORS, Digitized maps, Rural Planning, and Property Tax among others. He urged that data of the SVAMITVA Scheme must be made available to the public for creating various applications. He also urged that planning for villages must take into account the shrinking population of villages and its likely impact on Anganwadi workers, health centers, etc. The state must also plan for using unclaimed land in villages and put them to good use.

Presentation overview of SVAMITVA scheme implementation and recommendations of Expert Committee report by Shri. Alok Prem Nagar, Joint Secretary, MoPR

- i. Shri. Alok Prem Nagar, Joint Secretary, MoPR apprised about the objectives of SVAMITVA Scheme and the Status of scheme implementation in various States and UTs across the nation – Settlement of disputes, creation of bankable ‘Record of Rights’ recognized by Banks and better quality GPDP among others. He also explained the various dos and Don’ts that States and UTs should remember while implementing the scheme.
- ii. Considerations and way forward were provided which the States should adopt for better resource utilization, faster exchange of maps, and establishment of CORS. Future targets for Dec’22 – MP and UP drone survey completion, property cards preparation completion in UT of Lakshadweep, Puducherry, DNH was also laid out. By March 2023, 2.5 lakh villages completion, March 2024- The drone survey completion in all inhabited villages and by March’25 – property cards preparation completion for all villages is targeted to be achieved.
- iii. State/UT-wise targets for drone survey and Property card completion were also provided. Best practices from MP, Maharashtra and Karnataka were briefly explained. He also talked about the expert committee report on SVAMITVA Scheme and various recommendations detailed in its chapters and urged the state to take necessary steps in order to adopt the recommendations.

Keynote address by Shri Sunil Kumar, Secretary, MoPR

- i. Shri. Sunil Kumar, Secretary, MoPR welcomed all the participants and dignitaries.
- ii. He acknowledged the different facets of the SVAMITVA Scheme discussed by previous speakers. He also acknowledged the efforts of Survey of India and Surveyor General of India – Lt. Gen. Girish Kumar, Sh. S. Chockalingam; Settlement Commissioner Maharashtra; Chairman, BoR, UP and Principal Secretary, Panchayati Raj, Haryana. Collective efforts have culminated in the success of the scheme today.
- iii. Backing of former Hon’ble Minister of Panchayati Raj, Shri Narendra Singh Tomar, who provided the necessary impetus to the Scheme. Property cards are being provided to all owners of rural inhabited land without discriminating against

- demography and social status. The scheme is providing bankable documents of their rural land assets in the Abadi areas and is helping in unlocking their capital value.
- iv. He also emphasized the need to plan for villages that have no Abadi. The circle rate of the Abadi area needs to be determined to provide market value to rural properties. 60 thousand villages near national highways and state highways proximity. If such villages have their property value unlocked, then a lot of liquidity can be infused into the market. He emphasized that nearly 2.5 lakh sq km area can be unlocked for monetization purposes.
 - v. Many aspects of Revenue, Panchayati Raj, and the Planning Department have been touched upon by the scheme and they will bring in further off-shoots in the coming years. He also urged the States for active cooperation by all stakeholders and step up the pace of implementation, while gaining from the experiences being shared during the conference.

Session II (Land Governance)

Group 1 – Implementation strategy in States/UTs where no prior records of Abadi area of villages exist

Moderator: Shri S. Chockalingam, DG, YASHADA

- i. The Moderator highlighted that majority of States/UTs have rules and land records for agriculture land, while in many places the Abadi area land records are still not available. He raised issues regarding the dilemma of responsibility for the land records of the Abadi area. Giving direction to the discussion further, he said that the discussion will be on two points, one is to identify the in charge of the records management and the other is how the rules should be.
- ii. Further, he requested the States/ UTs to share the best practices, strategies adopted and amendments in Laws/Acts to achieve the intended objective.
- iii. Sh. Dilraj Singh, Secretary, Revenue Department, Punjab said that State is having partial records of the Abadi area and common land. The State is working towards providing Records of Rights under the SVAMITVA scheme. He also discussed the act of Punjab regarding providing ownership rights to the persons holding possession of the land. Rules were also drafted under this act. He informed that the State has developed

software to prepare the certificate for ownership of the property and said the record will be maintained by the revenue department.

- iv.** Sh. Bhisham Lal Verma, Deputy Commissioner, Board of Revenue, Uttar Pradesh said that the Abadi survey is already included in the Revenue code in the year 2016. Under that code, rural Abadi survey regulations were notified. The department is surveying the rural Abadi land under survey regulations. He highlighted the issue of ownership of women of the parental family and requested that this issue should be dealt.
- v.** Sh. Arjun Mohan, IAS, Lakshadweep said that out of 10 inhabited islands in the UT, all 10 islands have been surveyed and hardcopy maps for 6 islands have been created. He also mentioned that the Revenue Department is leading the scheme implementation in UT and said that on certain issues the Union Territory is continuously discussing with the Survey of India to seek solutions/insights.
- vi.** Sh. Shriman Shukla, Commissioner Land Records, Madhya Pradesh said that the Revenue department is working on map creation and Records of Rights (RoRs) and the created RoRs are available on the Madhya Pradesh portal. He said that as per the Madhya Pradesh Land Revenue Code, the map of each population plot would be compulsory.
- vii.** Sh. B L Gupta, Executive Engineer, Panchayati Raj Department, Rajasthan informed that Property cards are being distributed according to the Panchayati Raj Act. He raised the issues of SVAMITVA scheme with respect to the maximum area to be considered for the property card. Further, Ms. Ronak Bairagi, Joint Secretary, Panchayati Raj, Rajasthan said that the Abadi area village comes under Panchayati Raj while the agricultural land comes under the Revenue department and said that the first time maps are being created by SVAMITVA scheme. He highlighted that in the State, District Magistrate has the power to convert an inhabited village to habited village.
- viii.** Ms. Ila Giri, ADM, Uttarakhand informed that maps have been received from Survey of India and the Revenue Department is working further to provide the property cards to the villagers.
- ix.** Sh. Arjun Pandian, Kerala informed that land-related issues are dealt with by the Revenue Department and said that State is planning for a digital re-survey of the State alongwith drone survey, out of which drone flying has been completed in 73 villages.
- x.** Sh. Rajeev Ranjan, Commissioner, Survey and Land Records, Jammu & Kashmir highlighted the issues regarding the declared habited and inhabited area. The State is

finding solutions to create the expansion plan for the habited villages. He also highlighted the issues of carrying out chuna marking in the hilly area.

- xi. Smt. Jhansi Rani, Deputy Director, Survey and Land Records, Andhra Pradesh informed that maps and post-survey activities are carried out by the Survey Department of Andhra Pradesh, whereas the mutation of title is done by the Revenue Department. She said that areas with more than 10 houses are to be treated as Abadi.

The discussion ended, with a vote of thanks from the Moderator. He suggested that all lands in the Abadi area should be surveyed.

Group 2 – Implementation Strategy in States/UTs where prior records of the Abadi area exist (either partial/complete)

Moderator: Shri Munish Moudgil, Commissioner, Survey Settlement and Land Records, Karnataka

- i. The moderator highlighted that it is always better in the interest of the citizen to issue them property cards. Not issuing property cards should be an exception as citizens cannot avail all its benefits.
- ii. There could be variations in actual possession of land and old legacy records. During the Gram Sabhas, if residents agree then maps to be finalized and property Cards to be issued. Disputes must be resolved at the local level.
- iii. If there are some disputes due to variation in actual possession and legacy records. Then the legal point of view must prevail as per legacy records. But if there is no proper record, then the matter may be referred to court. The process of amicable settlement is always desirable.
- iv. States must make provisions under Acts/Laws to take into account such cases and provide a record of rights/legal recourse to the settlement of disputes. For example, in Karnataka, State has created a lookup table to guide the inquiry officer regarding the decisions that may be taken depending on the situation on the ground.
- v. States may take a decision whether to provide RoR based on the factum of possession or legal ownership on case to case basis.
- vi. In case of government land occupation – The state may take a policy decision to provide RoR/Regularize/Not issue

Group 3 – Special consideration areas like 5th, 6th, schedule, and article 371 areas

Moderator: Shri Shantanu Gotmare, Director, Land Records, Assam

At the outset, Moderator gave a brief introduction of the special consideration areas and laid down the agenda of discussion which included land governance structure in special areas and key factors in the implementation of the SVAMITVA Scheme. The key points which were highlighted during the discussion are as follows:

- i. Chhattisgarh and Himachal Pradesh have State revenue codes/regulations to restrict the acquisition of tribal lands by non-tribal entities.
- ii. The concept of Abadi areas in special consideration areas is different as compared to the other areas. In the case of Assam, except BTCs, there is no designated Abadi area however, the land records include two types of land, homestead lands, and agricultural lands.
- iii. In Chhattisgarh, there are two types including Prachalit Abadi areas & Protected Abadi areas, and KML files are created for both areas.
- iv. In Manipur, there are no Abadi areas, however, it has valley areas, which are largely surveyed, and textual land records exist, where village recognition is done by Revenue Department. The SVAMITVA Scheme has only started in valley areas, and Hill areas are un-surveyed, they must also be considered and covered under the SVAMITVA Scheme.
- v. In Mizoram, 330 villages have been identified which have not been surveyed and there are other villages that have been surveyed, however, those are not included under the scheme. There are notified towns that are defined, land settlement certificates have been issued and KML files exist, and boundaries of those villages could be defined. For ADCs, 102 villages exist, of which some are surveyed; 9 unsurveyed, and some are partly surveyed, the details of which would be provided later. MLEC, 77 villages are being surveyed and village boundaries for those could be identified. Under the Chakma ADC, 88 villages are included under the SVAMITVA scheme and although some surveys have been done, there is a need for the utilization of drone technologies.

- vi.** In Arunachal Pradesh, no surveys have been done in village areas, and only urban areas have been surveyed. There are 25 Districts, in which 3011 Villages are present. The state has observed some resistance from the locals as the entire land is community land and donated for public purposes. In Arunachal Pradesh, terrains are difficult and there is a need for the utilization of modern technology. The villages could be defined and KML files could be generated. As per Survey of India, KML files of 2400 villages have been received.
- vii.** In Tripura, around 70% of the geographical area falls under the purview of ADCs, and 587 villages are under ADCs. The village maps were prepared during cadastral survey, which may not be accurate. The Moderator pointed out that the Forest villages are not covered under the SVAMITVA scheme. However, it was suggested that the FRA villages may also be considered under SVAMITVA by MoPR. SVAMITVA may also be considered for ADC areas and may also be included in the discussion. Moderator suggested that the State should consider the formulation of a District Project Management Unit (DPMU).
- viii.** Shri M. K. Stalin from Survey of India pointed out that the feature extracted maps given to the State were compared to the legacy maps which were available with the States and observed not to be matching. PoC drone flying has been in some villages and data has been shared with the State, for which the feedback is awaited.
- ix.** Moderator while highlighting the challenges faced and support required under SVAMITVA Scheme, informed that during the pre-drone flying stage, ADCs don't have separate survey wings due to which they faced difficulty in the creation of KML files. Thus, technical support in this regard was required, for facilitating the creation of KML files. It is often observed that DPMUs don't get the funds in comparison to the funds received by SPMUs. Thus, it is suggested that per DPMU, 2-3 people could be hired, and paid by MoPR, who would be further absorbed and hired under SPMU, when the DPMU term ends. Chuna marking may not be possible for hill areas and other alternative methods may be utilized. Shri M. K. Stalin suggested that plastic reflectors may be used and a PoC has been successfully done for the same in Assam & Tripura.

Session III (Property Tax)

Online Panchayat Property tax system, automation of Gram Panchayat property register, and linking with land revenue records.

Moderator: Shri Vinod Yadav, Deputy Director, Madhya Pradesh, Panchayati Raj department

Speaker: Ms. Shilpa Sharma, Commissioner, Panchayati Raj, Karnataka

- i. The Speaker highlighted the present OSR demand as Rs 680 Cr for 2021-22 which is expected to increase to 1000 Cr after SVAMITVA Survey data is integrated. Tax collection from gram panchayats was 90% for 2021-22.
- ii. Gram Panchayats are free to utilize OSR funds for development activities post giving 40% of funds in salaries for panchayat employees. Broad guidelines are issued for utilizing OSR funds for SC/ST welfare, and child & women welfare, etc.
- iii. 'Panchtantra' application is being used for the online property tax system and e-Swathu application was also started on 13.06.2022 for maintaining property records for rural areas.
- iv. Property tax is collected from approximately 1.42 crore properties in the gram panchayats. Post SVAMITVA, missing 75 lakhs more properties are expected to come within the jurisdiction of property tax collection.
- v. She pointed out the benefits of the addition of missing properties and revision in the area (approx. 40% addition) is expected in the existing property records as the exact area is captured for land and building through drone survey.
- vi. Gram Panchayats are empowered to bring changes in the act with regard to property tax estimation and collection. As per the same, revisions were done in rules in 2016 & 2022, and market guidance value and area are undertaken for property tax calculation.
- vii. Highlighted issues like unscientific tax calculation methods, less accurate calculation systems, and non-updation in registers to previous tax collection mechanisms that resulted in low revenue collection from gram panchayats.
- viii. Discussed three methods that are used till date for property tax calculation – Annual Rental Value, Capital Value method, and Zonal Classification Method.
- ix. Capital value method is followed in Karnataka for the calculation of Property Tax of Gram Panchayats whereas the Zonal Classification Method is also used for some Urban Areas in Karnataka.

- x. Gram Panchayats must revise the tax rates every two years and fees every year. The 'Panchatantra' application can be used to keep track of gram panchayats that have not revised their taxes.
- xi. Various initiatives were taken for providing assistance in online payments through the establishment of 'Bapuji Seva Kendra' in Gram Panchayats. Additionally, Payments can be done through homes by Panchatantra 2.0.
- xii. 5% rebate is granted for timely taxpayers and a 10% rebate is given to house owners having provisions for solar systems, solid & liquid waste management and rainwater harvesting systems.

Determination of Property tax utilizing SVAMITVA data and benefits incurred

Speaker: Sh. Ayush Prasad, CEO, ZP, Pune

- i. Sh. Ayush Prasad discussed SVAMITVA impact on Property Tax, encroachments in Villages, Women's property rights and planning tools.
- ii. He presented various benefits of SVAMITVA in problem-solving for issues like mutations in property registers, acceptance of Form-8 by banks for approving loans and consolidation of properties, dispute resolution, increased taxable areas, encroachments identification and in the planning of other programs like SBM, SWM, Jal Jeevan mission, etc.
- iii. It was informed that an increase of 3.98% was observed in the taxable area of Walunj village whereas a 25% increase was observed in tax collection for the year 2021-22.
- iv. Minor built-up area was added, and categorization mistakes were corrected after SVAMITVA Survey in walunj village. He also highlighted tax collection identification in difficult geographic hilly areas of Lonavala through SVAMITVA.
- v. Rise in government revenue collection through fines collected from encroachments.
- vi. 202 de-populated villages are there in the Pune district where the population has decreased on the course of migration and many buckled (not owned by anybody) properties were tacked that could be utilized for other purposes in the future.
- vii. 88% of properties in the Pune district were solely or jointly owned by women members of households.

State-wise discussion on key-points

- a) Existing Property Tax System in villages**
- b) If there any increase in Property tax utilizing SVAMITVA data/maps**
- c) In case of Property Tax is not collected/ or the system does not exist, whether States plan to introduce it**

Speaker: Dr. Ghanshayam Anuragi, President, ZP, Jalon, UP

The speaker pointed out the absence of a Capacity Building and Engineering Section at the Gram Panchayat Level that has resulted in less production of maps in the State. Proper procedural and map approval processes shall be followed before building up a house in the village. Procurement of computerization and deputation of manpower at each Gram Panchayat level. Due to the non-presence of maps and legal documents, banks are reluctant to give loans to farmers against their properties. Post following proper procedures and generating authenticated documents for tax collection, some small amount of property tax shall be collected for giving the identity and strengthening the gram panchayats.

Speaker: Smt. Jhansi Rani, Deputy Director, SSLR Dept, Andhra Pradesh

The speaker highlighted that in Andhra Pradesh, there are approx. 90 lakh properties under the property tax bracket which is expected to increase to 1.6 Cr after SVAMITVA. Currently, the Present tax collected is 680 Cr which may also increase to 1080 Cr after the implementation of the SVAMITVA Scheme. The Chief Minister has established decentralizing taluk system to the village level. They have established about 11,000 village secretariats to access the public to get their land surveyed and get their land ownership record. Due to this engagement, people are coming forward to get their properties surveyed. Moreover, all sorts of certificates are issued at the village level. Mutations are carried out by the revenue authority whereas survey is carried out by survey officers.

Speaker: Shri Balbir Singh, Member, Zilla Panchayat, Ludhiana, Punjab

The Speaker informed that there is no property tax system in the villages as of now. Speaker insisted that a provision to be created for own source of income for panchayats to bear for its running expenses.

Speaker: Shri Binu John, Deputy Director, Government of Kerela

Speaker appraised that, under Kerela Panchayat Raj Act 1994, Gram Panchayats can levy different types of taxes including Property tax, Professional tax, Entertainment tax, etc. Property tax can be accessed online on a platform called 'Sanchaya'. Rates are based on Plinth Area as well as on the category of building. Approximately 90% of tax was collected from Gram Panchayats for FY 2021-22. The Panchayat Secretaries are maintaining assessment registers for each ward of the village. In addition to property tax, Panchayats can levy Service Tax for certain services (should not be 10% of property tax). 'Sanchaya' software is developed for the public to make e-payments also, and other reports can be generated through it.

Speaker: Dr. Raunaq Bairagi, Additional Commissioner, Panchayati Raj, Rajasthan

Speaker informed that there is a provision for the collection of tax from buildings based on the Built-Up Area in the Panchayati Raj Act. However, due to improper documentation and maintenance of records, the Collection of Property Tax has not been initiated yet. However, SVAMITVA Scheme is providing an opportunity to levy the Property Tax in Gram Panchayats by creating a proper database and documentation of the property records. Post SVAMITVA, Rajasthan Panchayati Raj Department may initiate the Gram Panchayats to start collecting property tax to increase their Own Source of Revenues.

Speaker: Shri Manoj Tiwari, DPRO- Dehradun, Uttarakhand

Speaker highlighted that there is a provision of the collection of Property Tax from buildings based on the Built-Up Area in the Panchayati Raj Act of the State. However, practically, State has not been able to implement it as of now. The State is focused on how SVAMITVA Data can contribute to the computerization and digitization of the property Registers. SVAMITVA will help in realizing accurate land monetization which would provide value addition in terms of GDP Planning and OSR generation. Bylaws, manuals, and formats of good performing States for assessment of properties and their services offerings would be studied. Best Practices from other States shall be replicated in Uttarakhand for a robust property tax management system.

Presentation by Moderator, Shri Vinod Yadav, Dy Director, Panchayati Raj, Madhya Pradesh

Briefly demonstrated the property tax module and its interface of important statistics. He presented the rate brackets for imposing a tax on the built-up area (in sq km) of buildings as per Gram Sabha Rules, 2001. Empowerment of revisions in tax slabs in the Act(Rules) lies with Gram Sabha. They can modify and amend it as per the requirement and necessity. Land for commercials is also incorporated along with buildings for imposing property tax in Madhya Pradesh. Gives an overview of online Property the tax system “Panchayat Darpan” Explained Targets for property tax collection and challenges and strategies devised to cater to them. SVAMITVA data integration with Sampada 2.0 is in process.

Summarization of the discussion by the Moderator Sh. Vinod Yadav, Dy. Director, Panchayati Raj, Madhya Pradesh

- i. The moderator summarized the points and experiences of all the esteemed Speakers. He mentioned that Karnataka Property Tax System has many slabs in its online property system. Other States may adopt fewer slabs for their Gram Panchayats as per the need and requirements of their respective States. The good thing that comes out of Karnataka’s presentation was a rebate in taxes to those having solar panels and water harvesting systems in their households which can be adopted by other States to promote such practices.
- ii. Maharashtra Property Tax System is achieving transparency in the property tax system through SVAMITVA, which has helped in eradicating fraudulent activities in Gram Panchayats and catch-ups of hidden built-up areas. The SVAMITVA survey has amended and increased property tax in Waluj Gram Panchayat. Boundaries demarcation and linking women’s names to the record of rights are some of the good practices that are being implemented by Maharashtra.
- iii. Uttar Pradesh pointed towards how the contribution from the taxpayer would help in the development of Gram Panchayats. Paying taxes will help the taxpayers to get recognition for their property and increase the value of their land. Andhra Pradesh has its own robust online property tax system whereas Punjab is not collecting any tax from people. However, Punjab shall look to break this approach and work towards

establishing a stable Property Tax in Gram Panchayats to make way for development and bear the expenses of Gram Panchayats.

- iv. The State of Kerala has its own unique model that may be difficult for other States to replicate full-fledged in their States. However, Other States can learn from the property tax system in Kerela and figure out what better alternatives could be taken out of it for adoption in their States.
- v. Concluding all points, the moderator highlighted the need and matter of integration and updation of available Property TaxSystem with SVAMITVA Scheme Data. The States may look to have a positive output-driven approach in parallel to capacity building at grassroots levels in adopting changes for the betterment of panchayats and building an effective property tax system across all states. SVAMITVA Scheme has given a great opportunity by setting up as a base through the creation of a reliable property database through which Property TaxDemand could be assessed accurately in all the States.

Proceedings of Day 2

Session I (CORS)

Speaker: Lt. Gen. Girish Kumar (VSM) Retd, Former Surveyor General of India, Chairman Hand holding and Monitoring Committee of SVAMITVA scheme

At the outset, the speaker highlighted the importance of CORS and how positioning infrastructure is relevant. In 2005, National Map Policy was released and during that time GPS was also used but it was not getting Real-time results. CORS can help in giving real-time results. Speakers from other departments also give a brief presentation on CORS.

Overview of CORS technology

Speaker: Shri Neeraj Gurjar, Director, G&RB, Survey of India

- i. The speaker highlighted that in the case of a land survey, location becomes very critical. It requires absolute measurements such as length/dimensions, mass, area, volume, etc., and referential measurements such as temperature, directions, etc.
- ii. Traditionally these various tools of measurement were used like tapes/chains, Auto/Digital Level, Total Station, GPS/GNSS, Terrestrial Sensors etc. In the case, of vegetation areas or where skies are not clearly visible, GPS was unable to perform to the best of its ability and when results were required in real-time then accuracy was not provided.
- iii. He also highlighted that various methods used for a land survey like chain survey wherein it requires local reference and guide direction.
- iv. Total Station Survey requires a starting/reference point and the reference direction.
- v. These days, drone surveys are being used and it also has a GPS device installed to acquire the position. Using technology, parcels are identified, and features are extracted.
- vi. In GPS surveys, GPS uses satellites to analyze the position and distance. Radio rays that come from satellites tend to come in a curve while entering the earth's atmosphere. In continuation, various methods to correct were also discussed.
- vii. CORS network is basically a network of permanently installed reference stations, continuously streaming raw satellite observations to a central server. Data collected through CORS is hosted online so that surveyors don't require reference stations to be set up. They can use the same data. RTK system used to require two GPS and a transmitter. It could only cover 10-20 km.

- viii. Network RTK helped in increased operational range, improve positional accuracy at distance, build improved redundancy, etc.
- ix. CORS helps in saving time and cost, is easy to use, and has homogeneity accuracy and homogeneity and traceability of coordinates.
- x. CORS in drone survey provides onboard position determination, Post-Processing Kinematics, and Real-time kinematics. Potential applications of CORS are Large Scale Mapping, Land Surveys, Auto Navigation, Machine Control in Agriculture, Intelligent Transport System and for Earth Observation Systems like Meteorological studies, etc.

CORS-based Survey and various use cases of usage of CORS in Rural India

Speaker: Shri Pankaj Gupta, Head of Sales, Geosystem, Hexagon

- i. Speaker highlighted network RTK which can provide a precise location to end users using GSM network and correction services.
- ii. CORS RTK provides mitigation of distance dependencies and higher accuracy and reliability over traditional RTK.
- iii. Speaker informed various case studies that are taken up to highlight the use of the firm like the Land record data management system. Hexagon provides an integrated solution and seamless process.
- iv. Airbourne Survey using fixed-wing aircraft and drones. CORS network helps in establishing ground control points which is an important activity for accurate geo-referencing, ground truthing, etc.

Utilization of Rovers for future updation – Demonstration of the operational model in State, usage, and other requirements

Speaker: Shri Sanjeev Trehan, Director, Business Development and Sales Government and Defense, Trimble Navigation India Pvt. Ltd.

- i. Speaker informed that the focus of the company is on autonomy, and commitment to innovation, values should be strategically vital, and stability is consistently proven.
- ii. Trimble has installed 298 CORS and integrated at the existing CC in Dehradun. Projects in Bihar, Telangana, and Chhattisgarh have been started. The setting up

of 118 CORS in NE states has been started. 60 CORS for National high-speed rail is completed.

- iii. Speaker highlighted the issues in the existing system in most state's revenue departments and other departments. Multiple handling agencies are involved, Old and outdated, incomplete graphical records, etc. CORS and GNSS can address all these issues. CORS helps in providing a consistent coordinate frame.
- iv. GNSS CORS infrastructure for property survey provides the backbone of precise positioning, maintains a common reference frame, reduces cost as setup time, Property tax assessment and collection, ensures consistency and repeatability, and supports drone survey, etc.
- v. He emphasized the RTK mode in CORS to make field crew operations effective and productive. CORS can also be used to derive virtual GCPs for the post-processing of drone survey data.

CORS Control Centre – requirement and benefits – Madhya Pradesh state case to case be elaborated

Speaker: Shri Ashish Bhargava, Addl. Commissioner, Land records, Madhya Pradesh

- i. Speaker discussed the advantages of the CORS network and the status of the CORS implementation in Madhya Pradesh. All 90 stations have been placed successfully and control center has been established.
- ii. He displayed a map showing where all the CORS stations have been established in the state with a buffer size of 35-45 km, CORS with elevation profiles.
- iii. He explained the key features of CORS commissioning i.e., the state has the capacity to onboard 500 concurrent users with the current system, the state has also purchased 60 rovers initially and has allocated one rover to each district, etc.
- iv. Advantages of NRTK were also highlighted i.e., positional accuracy, reliability, availability, stability, scalability, flexibility and compatibility.
- v. He also informed that the state has commissioned Central Control Center to increase concurrent users with State requirements, device management and

tracking with fast retrieval of data, accuracy can be controlled, to ensure end-to-end computerization of demarcation and survey works, etc.

Benefits related to Central Control vision were also discussed i.e., SVAMITVA drone images ortho rectification, CORS based, demarcation, Survey/Reserve, relief management, Gram Panchayat development plan, water resource management, etc.

CORS – Question Answer Questions

Moderator: Lt. Gen. Girish Kumar (VSM) Retd, Former Surveyor General of India

1. Dr. Rama Pandey, HoD, Environmental Planning, SPA Bhopal enquired about the usage of the CORS network and accessibility of data for planning at ward and village levels.

Following was the response from the penal:

- i. CORS is a positioning device and can provide coordinates of a point. The data will be made available for usage by other agencies. ORI can be readily made available but areas outside of Abadi may not be available to other agencies readily since it is outside the scope of SVAMITVA.
- ii. MP State Revenue Department will also provide CORS services to other agencies.
- iii. Spatial datasets would need to be captured on the field for environmental planning purposes for which CORS can provide accurate positioning service.
- iv. For many studies raw GNSS data is used like ground subsidence analysis and weather prediction. The raw GNSS data is made available for research and academic services free of cost. CORS services can be availed through the CORS portal of Survey of India. For states like UP, Uttarakhand, Haryana, Maharashtra and Karnataka data will be provided to agencies free of cost.

2. Shri Shantanu Gotmare, Director, DLRS, Assam asked about involving the Ministry of Defense in laying out infrastructure for border areas in order to provide broadband connectivity for operationalizing the CORS network in Assam, and the densification of the CORS network.

Following was the response from the penal:

- i. Densification is the requirement of the future and may be done in collaboration with order departments in order to address shared needs and address funding issues as has been done by Sol in the case of UP and Uttarakhand under National Hydrology Project.

- ii. Communication infra is lagging in many states like NE States, Lakshadweep Island and upper reaches of J&K, Himachal Pradesh. For that, VSAT service providers are being engaged like BSNL to bring the data to the control center, for consumption by consumers it may have to be addressed based on the demand. Satellite-based correction services may be incorporated in collaboration with ISRO.
- iii. With the current network accuracy of 3-4cms is achieved with a precision of 95%. For Metropolitan areas, a precision of >99% is needed depending upon use cases.

3. **Shri Gokul Pardesi**, Elected Representative, Maharashtra enquired about the Interstate boundary dispute owing to a parcel of land falling under the Forest Department.

Following was the response from the panel:

- i. The Inter-state boundary dispute is not under the purview of the SVAMITVA Scheme. It must be a considered decision between the states. Sh S Chockalingam, DG, YASHADA said that Govt of Maharashtra must take a pilot project to reconcile forest boundary and revenue boundary since the forest department is on a weaker footing compared to the revenue department as the maps are on 1:4000 or 1:10000 scale. There must be coordination between the revenue and forest department to demarcate boundaries.

4. **Shri Sunil Verma**, Chief Engineer, MPRDC enquired about issues of demarcation of roads and government land and issues pertaining to the realignment of roads due to landslides.

Following was the response from the panel:

The need to obtain 3D maps and Geostrata to cater to such challenges was emphasized however, In the SVAMITVA scheme maps of only the Abadi area are available, MPRDC may speak with the State Government or Sol for georeferenced maps of land outside of the Abadi area.

5. **Sh Durgesh Singh**, MP State Revenue Dept enquired about the Geoid model being made available for MP State so as to bring all other state departments on board to use the CORS network.

Following was the response from the panel:

- i. Sol is undertaking the exercise to create a Geoid model for the country which will provide the relation between ellipsoidal and MSL height. CORS will provide ellipsoidal height and the Geoid model can be used to get MSL height with an accuracy of 10cms. UP, Haryana, Punjab, Bihar, West Bengal, and Jharkhand have been completed.

- ii. Work is going on in Andhra Pradesh and Telangana. In the next two-year Geoid model will be established for the entire country, the Geoid facility will be transmitted through CORS so that when measurements are done using Rovers, users can get MSL height directly. March'24 is a tentative timeline for the Madhya Pradesh Geoid model.

6. **Sh. Achyut Joshi**, Consultant, MP Planning Commission enquired about the use of CORS in aspirational district programs and SDGs.

Following was the response

- i. CORS can provide solutions to the locational problems faced, eg., Public Distribution Systems, Vehicle Navigation systems, and supply chain optimization, among others. Wherever geospatial data is required, inputs from CORS can be availed.

7. **Sh Balasubramanian** from IMD enquired about accurate weather forecasts, planning, and mitigation of urban flooding.

Following was the response

- i. IMD is using CORS for weather profiling, but as of now, they have only 28 stations equipped to measure weather profiles within a 100 km radius. CORS network can help provide long-term weather forecasts as well as now-cast for predicting cloud bursts etc. Sol is collaborating with IMD to establish a Metsensor network. For mitigation and planning, high-resolution DEM is required. Government agencies must come together for shared objectives and pool resources to create DEM for large regions.

Map-To-App Session

Survey of India to present on the availability of CORS data to Government, Public, and Private use:

Speaker: Shri Upkar Pathak, Superintending Surveyor and Technical Secretary, Survey of India

- i. Speaker apprised the audience regarding the functioning of the CORS. He showcased how multiple CORS networks continuously give data to Control Stations and Control stations will calculate the corrections and prepare models. When the Rover is used in between these CORS stations, it can connect to the Control Stations using the internet.
- ii. There are various Reference data services that will be offered by Survey of India CORS portal i.e., Post Processed Kinematic (PPK), Virtual Rinex, and Reference Station Data.

- iii. In Remote locations where the internet is not available PPK can be used for making RTK corrections. Virtual Ringex is used when it is not possible to physically establish a base station. CORS also provides multiple opportunities like Multi-SensPlatform, Research, and Academia purposes.
- iv. CORS Portal of Survey of India can be reached at (<https://cors.surveyofindia.gov.in/>). It has information related to CORS, services offered, Registration process, details of subscription fees, use cases of CORS Realtime services, Video demo of the CORS services, etc.
- v. Speaker also highlighted the New Geo-Spatial Guidelines 2021 for acquiring and producing Geospatial data and Geospatial data services including maps.
- vi. The user Groups of the CORS network are Government Agencies, Public Sector companies, Academic and research, individuals, Indian Firms, Foreign entities, etc.
- vii. It has been noticed that most of the users are of States Governments, especially Maharashtra and Karnataka. Real-time services are being used by Government for RTK services.
- viii. In terms of Pricing, till March 2023 Services will be free to Government, Academic users, and private users. Post-March 2023, as per the Government Policy, services will be chargeable to private users.

Deliberation on utilization of CORS data for application generation:

Speaker: Shri Sandeep Chaudhary, Professor In-charge, Centre for Rural Development and Technology, IIT Indore

- i. Speaker informed that he is heading the Centre for Rural Development and Technology. The center was established with a vision to develop technologies that are inclined toward rural areas without compromising on quality.
- ii. It was highlighted that the institute is willing to collaborate for trial cases, sharing information with rural communities. The department can work on the creation of User-friendly applications, to use for the border management system, and agricultural lands, using Geo tagging we can analyze the trend of farming, cropping patterns, etc. App-based transportation models may be developed to reach the destination, wildlife tracking.

Speaker: Shri Jaswinder Singh Grewal, Principal Architect, Google Cloud

- i. Speaker informed that recently Pune transport Corporation and Google have done a contract to utilize google maps to track their public transport. Under this, the users/citizens can track buses, routes, availability of transport, etc. Similarly, data generated can be utilized for the purpose of transportation, agriculture, etc.
- ii. It was informed that the maps generated under the scheme can also be used in Google Earth. While structuring the development of the Google Earth Engine various catalogs were used, the first one being the data catalog, data generated under SVAMITVA scheme can be consumed via an API. It acts as a computation platform and provides a collaborative Ecosystem.
- iii. Speaker informed that they had a meeting with Survey of India and apprised them about the applications developed by Google.
- iv. In order to use data for town planning or other purposes, real-time data and updated data will be required like a contract between Pune transport corporation and Google wherein real-time updates of the buses are being made available to the users on google map base.
- v. Storage may be made available on the cloud (*charges may apply on the type of storage opted*). Google also has custom build hardware for handling the Geo-Spatial database.
- vi. The translation system will help in translating English to a rural language or from a regional language to English.

Session II (Rural Planning)

Keynote address on:

- i. Rural Spatial Planning and RADPFI Guidelines
- ii. Setting up stage for Modal Rural Transformation Act 2022

Speaker: Dr. N. Sridharan, Senior Professor, School of Planning and Architecture, Delhi.

- i. Dr. N. Sridharan thanked the Chair, Dignitaries, and all the Participants. He gave a brief introduction about his engagement since 2016 with the preparation of RADPFI Guidelines. He also highlighted the need for spatial planning in rural areas which brought in the idea of revising the RADPFI Guidelines in 2021 which was published by MoPR in 2022.
- ii. He emphasized on the visioning process is required for a good planning process and outcomes. He detailed the RADPFI Guidelines which are a set of standards that will help

during the Spatial Planning for the integrated development of the Panchayat, Cluster, Block, and District as well. In the revised RADPFI Guidelines there are additional sections like Typology of Villages, Landuse Standers for different areas, Village Town Planning Scheme (VPS), Disaster Preparedness, linking to 15th CFC and respective SFCs and using SVAMITVA Scheme data for Abadi Areas for Planning. He discussed about the connectivity of the villages with the Highways and the value of capturing the potential of these lands. He highlighted that the Scope of Growth and Development potential of Peri-Urban areas as well as Census Towns can be only shaped by undertaking the spatial planning for long-term in these areas. He has analyzed that by 2047, India will be 50% Rural and 50% Urban, so the standards need to be uplifted.

- iii. He also gave a reference about the Model Rural Transformation Act. He highlighted that it would talk about rural areas at different levels. The Village Planning Scheme (VPS) and how it will help in reshaping the Rural Landscape

Suggestive interventions through Rural Spatial Planning; a Case from Haryana Gram Panchayat

Speaker: Dr. Sangeeta Bagga Mehta, Principal, Chandigarh College of Architecture.

Speaker highlighted that Chandigarh College of Architecture was one of the Partner institutes to prepare the Gram Panchayat Spatial Development Plans (GPSDP) for the Panchayats of Pathreri and Mullana. During the exercise of preparation for the GPSDP, it was important to build trust to connect with the panchayats. The main difference between the Panchayats was, while Pathreri is more of an Agri-Based Village, Mullana due to its proximity to the Highway is more like Urban-Village. For preparing the Gram Panchayat Spatial Development Plans, exhaustive stakeholder discussions were conducted, and data were collected and analyzed. Based on it, the proposals were suggested, and land use plans were prepared. The available land pockets could be used for development. Water bodies could be used to recharge the water tables. Further, the final Land use was explained to the villagers through a physical and 3D model. The 3D model gave them a glimpse of the current situation analysis and the situation after the implementation of GDPSD and building byelaws. She ended her presentation with a vote of thanks.

Opportunities in Rural Planning with the help of the SVAMITVA Scheme

Speaker: Sh. Alok Prem Nagar, Joint Secretary, Ministry of Panchayati Raj, Delhi.

- i. Sh. Alok Prem Nagar welcomed the Chair, Dignitaries, and all the Participants. He gave a brief introduction to the Planning process being followed up in the Rural Areas and how the assets in the rural areas are being planned and constructed.
- ii. He highlighted that the planning has been going on in a very organic way and to bring more objectivity to the planning process, spatial planning aspects need to be introduced in the current planning process. He also highlighted that since the data for rural areas is not available on regular basis hence the updation of data will also take time and this is where the relevance of SVAMITVA Scheme gets noticed. Under SVAMITVA Scheme high resolution maps of the Abadi Area are being produced, Digital Elevation Models (DEM) are being captured and GIS data of the visible features are being created by capturing their attributes.
- iii. SVAMITVA Scheme data can help in preparing the existing land use maps, in identifying the Build-Up area of the Abadi area, Vacant Land in the Abadi, and types of Structure. Ownership of Vacant Land. Similarly, the demarcation of physical infrastructures like Transport Networks, Street Lights, Water Connections, Sewerage Connections, Public Connections, Solid Waste bins, and Social Infrastructure like Educational Institutes, Health Institutions, and Public-Semi Public. It can help in Disaster Management as the DEM data can provide the data of higher elevation grounds where emergency points can be created.
- iv. He shared that the MoPR has partnered with 17 Planning and Architecture Institutions that have helped in preparing 34 Gram Panchayats Spatial Development Reports. These Gram Panchayats were selected as they were near major transport corridors like National Highways of State Highways and have better growth opportunities. The Spatial Process will be based on the envisioning process and building bylaws as well as the building permission system to be implemented for regulating the development in the rural areas. States like Tamil Nadu, Uttar Pradesh and Andhra Pradesh have existing Building Permission System. Gram Manchitra is also a helpful tool as it helps in estimating the infrastructure requirements and will be developed further for new possible planning and monitoring interventions.

Session: Experience Sharing Session: Bilkisganj, Madhya Pradesh

Speakers 1) Dr. Rama U. Pandey, Professor, School of Planning and Architecture Bhopal.

2) Elected Representative for Bilkisganj Gram Panchayat.

Dr. Rama U. Pandey gave a brief introduction to the Bilkisganj Gram Panchayat. It is near the Highway. It had many issues like accessibility, solid waste management, sewerage, etc. In the prepared GPSDP, many proposals were suggested. The Gram Panchayat has worked in line and implemented a few of the proposals in a phase-wise manner. A few of the projects implemented in the first phase were, household water connections, door-to-door solid waste collection, rainwater harvesting in public buildings, common leach pits for household grey water, Overhead Tanks, etc. The interventions like rainwater harvesting have been installed in public buildings which have helped in raising the water table. Construction of Leach Pits for grey water and using the filtered water from leach Pits for Kitchen Gardens, door-to-door collection of solid-waste and segregation of waste into 7 sections. Kaccha roads have been converted to Pucca roads and open drains along those roads have been covered respectively by the Panchayats. Public Toilets have been constructed at prominent locations. Footpaths for walking have been upgraded with the installation of pavers blocks. She concluded the presentation with positive remarks that GPSDP prepared for the Bilkisganj Panchayat has helped them in identifying the priorities for development and they are implementing the proposed projects in phases. The implementation of GPSDP has helped them by creating awareness and it will help in achieving long-term development and sustainable goals. It will help them in making informed decisions. She concluded the presentation with a vote of thanks.

Session-II: Experience Sharing Session: Belhe Gram Panchayat, Maharashtra

Speaker: 1) Dr. B.H Suthar, Senior Professor & Ar. Sunil Terdalkar, Bharati Vidhyapeeth College of Architecture, Pune

- i. Dr. B.H Sutar gave a brief introduction to the Belhe Gram Panchayat. Extensive Stakeholder Consultations were done while preparation of the GPSDP. It is near the Highway and is a hub for educational institutes. There are no food processing industries or formal animal husbandry for around 600 cows and buffalos are followed in the Panchayat. The same has been strategically proposed in the GPSDP prepared by the institute. Other proposals included Road Connectivity, Non-Fertile Land utility, soil drainage, ease of infrastructure provision, and balanced growth in all the wards. The Gram Panchayat has worked in line and implemented a few of the proposals in a phase-wise manner. A few of the projects implemented in the first phase were roads and water

connections. The identified roads have been paved with concrete and on footpaths, paver tile blocks have been installed. Water lines have been laid to the households of the Panchayat. A solid Waste Collection Yard has been created for recycling and the panchayats have the potential for waste-to-energy. There were some long-term proposals suggested as well like Stream Corridor Development (can be taken up from 14th Finance Commission Grant), Special Rural Economic zone- with Cold Storage, processing plant, skill development centers- Women and Youth training centers (can be taken up from Maharashtra State Horticulture and Medicinal Plant Board), promotion of renewable energy and local resources.

- ii. One of the highlighted proposals was for the Gram Sabha Building which had the feature of Solar installation at the rooftop with a capacity of 25kW. The lower floors could also be used by the GP for collecting revenue through rental-generating activities in different floors. The Elected Representative Sh. Gorakshanath Wagh, Elected Representative from Belhe GP discussed about the useful takeaways of SVAMITVA Scheme from the Workshop. He also thanked the MoPR and Institute for the preparation of the GPSDP which has made the selection of development work easy. They concluded the presentation with a vote of thanks to all.

Valedictory Session:

Summarization of two-day workshop by Joint Secretary, Ministry of Panchayati Raj

Speaker highlighted the importance of benefits that can be availed under the SVAMITVA scheme by primary stakeholders i.e., state departments. He summarized the session by informing about the pre-survey activities that must be taken up by the State. The state shall make necessary amendments to their State's Acts/Rules and finalize the property card format. Implementation should be target oriented and must be completed in a time-bound manner. Once property cards are distributed these can enable the collection of property tax. Speaker gave the example of Maharashtra on how the State has hired four-five employees in the Gram Panchayat by the Panchayat itself and the remuneration is paid by the Panchayat, not Government. Once these have been in the position for six-seven years then they become eligible for the position of Gram Panchayat. Collection of Property Tax helps Panchayat in maintaining the facilities and healthiness of the villages. CORS may help in agriculture, accurately marking the parcels, etc. Different institutes which were present at the Conference like Google, Trimble, and Hexagon may also help in analyzing the traffic movement, surveys, etc. Survey of India has also

developed software to understand more about the CORS network. He praised the speakers for their contribution towards the successful implementation of the conference. He also thanked all the participants for their presence and for sharing information during the conference.

Annexure

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