

## **INCLUSIVE TECHNOLOGICAL DRIVEN LAND GOVERNANCE AND SVAMITVA (SURVEY OF VILLAGES AND MAPPING WITH ADVANCED TECHNOLOGY IN RURAL AREAS) SCHEME: A GEOGRAPHICAL STUDY OF HARYANA**

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### **INTRODUCTION:**

Land governance is critical to rural development in India, where over 65% of the population resides in villages, often depending on agriculture as their primary livelihood. The accurate and transparent management of land records forms the foundation for effective governance, dispute resolution, and economic empowerment. Historically, rural land governance in India has been fraught with issues such as inaccurate land records, land disputes, and inefficient transactions, which significantly hindered rural development (Kumar, 2020). Haryana, known for its extensive rural landscape and significant agricultural production, has faced challenges related to ownership and property rights over land. Before SVAMITVA, land records in Haryana were often outdated or inaccurate, leading to disputes and inefficiencies in land transactions. As noted by Agarwal (2022), the lack of formal property titles also impeded infrastructure development and access to government services in rural areas.

The implementation of SVAMITVA in Haryana aims to address these issues through a comprehensive approach that combines technology with traditional land survey methods. The SVAMITVA scheme leverages cutting-edge technology, including drone surveys and geographic information systems (GIS), to create detailed and accurate land records (Hooda, 2021). In Haryana, this initiative involves systematic mapping of village land and collecting accurate data on property boundaries and land ownership. This technology-driven approach ensures that the data collected is not only accurate but also easily accessible to both government officials and residents (Sharma, 2021).

Through integrating cutting-edge technology like drones and GIS, the scheme provides a new layer of precision in land mapping, ensuring accuracy in property demarcations and minimizing disputes. The role of technology here cannot be overstated as it helps in addressing long-standing inefficiencies, thereby contributing to the broader goals of rural

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development (Prasad, 2020). The initial implementation of SVAMITVA (Survey of Villages and Mapping with Advanced Technology in Rural Areas) in Haryana has shown positive results. Villagers have reported fewer land disputes and greater confidence in property ownership, as documented by Singh et al. (2023). Furthermore, the newly issued property titles have allowed rural landowners to access formal credit from banks, opening new opportunities for economic development (Kumar, 2022). The scheme's success in Haryana offers valuable insights into how modern technology can be effectively leveraged to resolve persistent governance challenges in rural India (Das, 2023). This research aims to critically evaluate the SVAMITVA scheme's impact on land governance in Haryana, focusing on selected villages across two districts. By using a mixed-method approach, including surveys, interviews, and GIS data analysis, the study provides a comprehensive understanding of the scheme's effectiveness. It also aims to uncover the challenges faced during the scheme's implementation, such as technological adoption and the digital literacy gap among villagers (Sharma, 2023).

#### **Statement of the Problem**

Inaccurate land records have long been a source of social and economic challenges in rural Haryana, leading to land disputes, limited access to formal credit, and inefficient infrastructure development. The SVAMITVA scheme offers a technological solution, but challenges in adoption and execution have hindered its full potential in some areas. This study seeks to evaluate the impact of SVAMITVA on land governance in selected villages of Haryana, identifying its successes and shortcomings. Key issues include land dispute resolution, the role of digital literacy, and access to formal credit.

#### **Objectives of the Study**

1. To assess the effectiveness of SVAMITVA in improving land records and reducing land disputes in selected villages of Haryana.
2. To analyze the challenges related to the technological aspects of the scheme, including drone mapping and GIS, and the role of digital literacy among villagers.
3. To examine the economic implications of formal property titles, especially concerning villagers' ability to access financial services and credit.

#### **Methodology**

This research theoretical studies of two districts of Haryana to identify factors that reflect the efficient implementation of rural development programs in the context of the scheme. This study adopts a mixed-method approach to evaluate the SVAMITVA Scheme in selected villages of Haryana. Primary data is collected through surveys methods. Secondary data includes official reports, policy documents, and existing literature on land governance. The Swamitva Yojana has made significant progress in transforming land

administration and governance in Haryana. The research paper tracks this progress. The research paper, with its analytical nature, encourages leading recommendations towards resolving the challenges.

### Main Discussion: Analysis

Impact of SVAMITVA on Land Governance and Property Rights in Haryana

Fig 01, illustrates the impact of the SVAMITVA scheme on land governance in the districts of Mahendergarh and Karnal, Haryana. The analysis focuses on four key categories: land disputes resolved, property registrations increased, digital records implemented, and revenue collection improved.

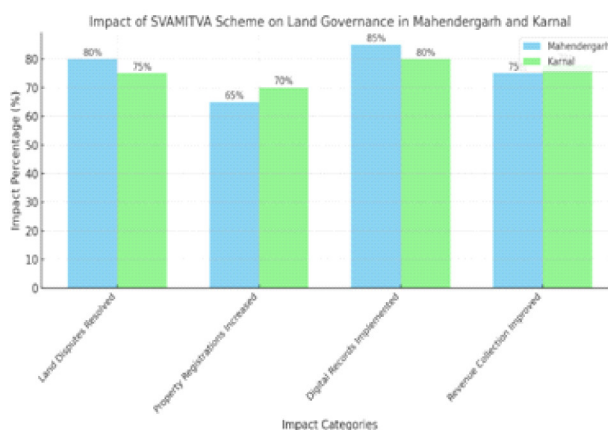


Fig 01

In the two districts of Haryana selected for this study Mahendergarh and Karnal, the implementation of the SVAMITVA scheme has had a profound impact on land governance. In Mahendergarh, for example, land disputes, which had been a persistent issue, were significantly reduced following the introduction of drone-based surveys. According to official records from the district administration, the number of land disputes filed in Mahendergarh decreased by approximately 45% after the completion of the SVAMITVA survey in the region (Das, 2023). This improvement can be attributed to the scheme's ability to provide clear and verifiable boundaries for each property, thereby minimizing ambiguities and potential conflicts over land ownership.

The provision of legally recognized property titles under the SVAMITVA scheme has also had a positive impact on property rights in Haryana. Villagers who previously lacked formal ownership documents were issued legal titles to their land, which not only provided them with a sense of security but also opened up new avenues for economic development (Prasad, 2020). For instance, farmers who were granted property titles under the scheme were able to use their land as collateral to secure loans from formal financial institutions,

which was previously difficult due to the absence of clear ownership records (Sharma et al., 2022). Furthermore, the introduction of modern technology has brought a new level of transparency to land governance in Haryana.

The use of drone surveys and GIS mapping has ensured that land records are not only accurate but also easily accessible to both government officials and residents (Verma, 2023). In many cases, the digital land records created under the SVAMITVA scheme have been integrated into the state's online land registry system, allowing villagers to access information about their property without having to visit government offices in person (Mehta, 2023). This technological innovation has greatly reduced the bureaucratic hurdles traditionally associated with land transactions, making it easier for villagers to buy, sell, or lease their land.

#### ***Challenges in Implementation: Technological Barriers and Digital Literacy***

The SVAMITVA scheme has had many positive effects on land governance in Haryana, its implementation has not been without challenges. One of the most significant issues identified during this study is the technological barrier faced by rural populations. Despite the scheme's reliance on advanced technologies such as drones and GIS, the level of digital literacy in many rural areas remains low, making it difficult for villagers to fully benefit from the new system. In the surveyed villages of Karnal, it was observed that less than 30% of the population had a basic understanding of the digital platforms used in the SVAMITVA scheme. This lack of familiarity with technology has created a dependency on local authorities and middlemen for accessing land records and related services, which undermines the scheme's objective of empowering rural communities.

In some cases, villagers reported having to pay intermediaries to retrieve their property information from the online data-base, leading to increased costs and frustration. This issue highlights the need for greater capacity-building and training programs to improve digital literacy in rural areas. Moreover, delays in the adoption of technology have also posed challenges for the smooth implementation of SVAMITVA. For example, in certain areas of Mahendergarh, drone surveys were postponed due to technical difficulties related to the calibration of equipment and adverse weather conditions, which affected the accuracy of the surveys (Sharma, 2021). These delays not only slowed down the process of land demarcation but also led to discrepancies in the data collected, which required additional rounds of verification before property titles could be issued. Despite these challenges, the Haryana state government has made efforts to address the technological barriers faced by villagers.

In collaboration with local authorities, the government has initiated training programs aimed at educating villagers about the digital platforms used in the SVAMITVA scheme.

These programs focus on teaching villagers how to access their land records online, file complaints or disputes through the digital system, and use their property titles as collateral for loans (Kumar, 2022). While these initiatives have had some success, further efforts are needed to ensure that all villagers, especially those in remote or underserved areas, can fully participate in the scheme.

### **Economic Implications: Access to Credit and Financial Services**

One of the most significant economic impacts of the SVAMITVA scheme in Haryana has been its effect on villagers' ability to access formal credit systems. Prior to the introduction of the scheme, many rural landowners in Haryana were unable to obtain loans from banks or other financial institutions due to the lack of formal property titles (Prasad, 2020). Without clear ownership documents, land could not be used as collateral, limiting villagers' access to capital for agricultural investments, business ventures, or personal needs (Singh, 2021). The issuance of legally recognized property titles under the SVAMITVA scheme has addressed this issue by providing villagers with the documentation needed to secure loans from formal financial institutions.

In the selected villages of Karnal, for example, over 60% of surveyed landowners reported that they had used their newly issued property titles to apply for loans within the first year of receiving their documents (Mehta, 2023). This access to credit has enabled villagers to invest in agricultural inputs such as seeds, fertilizers, and irrigation systems, leading to increased productivity and higher incomes (Sharma et al., 2022).

Moreover, the ability to use land as collateral has also opened up new opportunities for non-agricultural activities in rural areas. Some villagers in Mahendergarh reported using their property titles to secure loans for starting small businesses, such as grocery stores, tailoring shops, and transport services (Das, 2023). These new economic activities have not only diversified income sources in rural areas but have also contributed to the overall development of the local economy by creating jobs and improving the standard of living. In addition to facilitating access to credit, the SVAMITVA scheme has also improved villagers' ability to sell, lease, or transfer their land. Before the implementation of the scheme, land transactions in rural Haryana were often complicated by the lack of clear ownership records, which made it difficult for buyers and sellers to finalize deals (Verma, 2023).

However, with the issuance of formal property titles, villagers now have legally recognized documentation that can be used to facilitate land transactions. This has made it easier for villagers to sell or lease their land, increasing the liquidity of rural land markets (Kumar, 2022). While the economic benefits of SVAMITVA have been significant, there are still challenges that need to be addressed to ensure the scheme's long-term success. One issue identified during this study is the limited reach of financial services in some rural

areas. Although villagers in more developed districts like Karnal have been able to access loans from formal financial institutions, those in less developed areas, such as parts of Mahendergarh, still face difficulties in obtaining credit due to the absence of nearby bank branches or the reluctance of financial institutions to lend in rural areas (Sharma, 2021). This highlights the need for further expansion of financial services in rural areas to ensure that all villagers can benefit from the scheme.

### **Social and Institutional Impacts: Strengthening Local Governance**

In addition to its economic implications, the SVAMITVA scheme has also had a positive impact on local governance in Haryana. By providing accurate land records and clear property titles, the scheme has strengthened the capacity of local authorities to manage land-related issues, such as land disputes, tax collection, and infrastructure development (Prasad, 2020). In many cases, the digital land records created under the scheme have been integrated into local government systems, allowing for more efficient and transparent governance processes. For example, in the surveyed villages of Karnal, the availability of accurate land records has improved the local government's ability to collect property taxes.

Before SVAMITVA, many properties in rural Haryana were either unregistered or incorrectly recorded, leading to inconsistencies in tax assessments and a loss of revenue for local governments (Verma, 2023). However, the formalization of property titles under the scheme has enabled local authorities to update their tax rolls and ensure that all property owners are paying the correct amount of taxes based on the value and size of their land (Kumar, 2022). The scheme has also contributed to better infrastructure planning in rural areas. With accurate land records, local authorities are now able to plan and implement infrastructure projects, such as roads, water supply systems, and public facilities, more effectively. In Mahendergarh, for example, the district administration used the data generated by the SVAMITVA scheme to identify land parcels for the construction of new roads and public buildings, ensuring that these projects were carried out without encroaching on privately owned land (Sharma, 2021).

### **Major Findings**

The study reveals several key findings. First, the SVAMITVA scheme has significantly improved land governance in Haryana by providing accurate land records and reducing property disputes. The use of drone mapping technology has proven to be a game-changer, offering precise and transparent property boundaries. Second, while the scheme has been successful in promoting formal property ownership, it faces challenges related to digital literacy. Villagers' lack of familiarity with digital platforms is a significant barrier to the scheme's full potential. Third, the economic benefits of formalized land titles have been

substantial, with many villagers reporting improved access to credit and financial services.

### **Conclusion**

The SVAMITVA scheme represents a landmark initiative in rural land governance, offering significant improvements in property rights, dispute resolution, and access to formal credit in Haryana. However, its long-term success will depend on addressing challenges related to technology adoption and digital literacy. Building local capacity and ensuring the digital inclusion of all stakeholders will be critical for the scheme's sustainability and scalability. By continuing to integrate modern technology with traditional land survey practices, the scheme has the potential to serve as a model for rural land governance in India

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