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Assessing the impact of the agricultural technology management agency (ATMA) on information access challenges for beneficiaries in Tirunelveli district, Tamil Nadu

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Abstract

Agriculture in India plays a pivotal role in the economy, necessitating effective dissemination of agricultural knowledge and technologies to enhance sustainability and productivity. The Agricultural Technology Management Agency (ATMA) serves as a decentralized extension system aimed at empowering farmers with relevant information and skills. This study assesses ATMA's impact on information access challenges among beneficiaries in Tirunelveli District, Tamil Nadu, focusing on the effectiveness of its interventions amidst diverse agro-climatic conditions. Employing a mixed-methods approach, the study utilizes before-and-after surveys, structured interviews, and focus group discussions to evaluate changes in beneficiaries' knowledge and attitudes. Key challenges identified include issues of timeliness, relevance of information, and the interpersonal skills of extension workers, alongside socio-political and technical constraints. Despite positive perceptions on collaboration and technology dissemination, marketing constraints remain significant. Findings underscore the need for improved feedback mechanisms, enhanced training for extension workers, and targeted interventions to address socio-political and technical barriers. The study contributes actionable insights to enhance ATMA's efficacy in promoting sustainable agricultural practices and fostering rural development in the region.

Keywords: Agricultural technology management agency (ATMA), Information access, Extension services, Agricultural development, Farmer empowerment, Sustainability, rural livelihoods

Introduction

Agriculture remains a pivotal sector in India, significantly contributing to the nation's economy and sustenance. Ensuring the efficient dissemination of agricultural knowledge and technology to farmers is crucial for enhancing productivity and sustainability. The Agricultural Technology Management Agency (ATMA) is a key initiative designed to facilitate the transfer of agricultural technologies and innovations to farmers. By providing a decentralized and demand-driven extension system, ATMA aims to empower farmers with relevant information, improving their agricultural practices and livelihoods.

In the context of Tirunelveli District, Tamil Nadu, the effectiveness of ATMA in addressing information access challenges for farmers is of particular interest. This region, characterized by diverse agro-climatic conditions, presents unique challenges and opportunities for agricultural development. Previous research has highlighted the critical role of information dissemination in enhancing agricultural productivity and the need for effective extension services to bridge the knowledge gap among farmers.

However, despite the efforts of ATMA, farmers in Tirunelveli still face significant barriers in accessing timely and relevant agricultural information. These challenges can impede the adoption of innovative practices and

technologies, ultimately affecting their productivity and income. Understanding the specific constraints faced by beneficiaries in this district and identifying potential solutions is essential for improving the efficacy of ATMA's interventions.

This study aims to assess the impact of ATMA on the knowledge and attitudes of its beneficiaries in Tirunelveli District, with a particular focus on the challenges encountered in accessing information. By examining these constraints and gathering suggestions from the beneficiaries, this research seeks to provide actionable insights to enhance the effectiveness of ATMA's information dissemination efforts. This investigation is expected to contribute to the broader discourse on agricultural extension services and inform policy recommendations for improving the delivery of agricultural technologies to farmers.

Materials and Methods: Research Design

This study employs a mixed-methods approach to assess the impact of ATMA interventions on the knowledge and attitudes of beneficiaries in Tirunelveli District, Tamil Nadu. Using a Before and After design, quantitative surveys are conducted to measure changes in knowledge and attitudes before and after ATMA interventions. Additionally, qualitative methods such as in-depth

interviews and focus group discussions provide deeper insights into beneficiaries' experiences and perceptions. Ethical considerations, including informed consent and confidentiality, are prioritized to ensure the integrity of the research process (Kumar, R. 2019) [9].

Locale of Study

The research is situated in Tirunelveli District, Tamil Nadu, a region known for its diverse agricultural practices and reliance on both rain-fed and irrigated farming systems. The district's varied topography, including coastal plains, river valleys, and mountainous regions, supports the cultivation of a wide array of crops. The selection of Tirunelveli is based on its agricultural diversity and significant participation in ATMA training programs, providing an ideal setting for evaluating the effectiveness of these programs. The district's coordinates are approximately latitude: 8.7254° N and longitude: 77.6842° E.

Sampling and Sampling Procedures

A stratified purposive sampling method is employed to select a representative sample of ATMA program beneficiaries. From the Valliyoor block in Tirunelveli, which comprises 18 villages, five villages are selected through purposive sampling based on the availability of ATMA beneficiaries. The selected villages are Valliyoor, Chithambarapuram, Jacobpuram, Karungulam, and Panankudi. From each village, 24 respondents are randomly selected, totaling 120 respondents. Data collection involves structured interviews, questionnaires, and field observations, ensuring a comprehensive evaluation of ATMA's effectiveness.

Selection and Measurement of Variables

The study categorizes variables into independent and dependent types. Independent variables include age, educational level, caste, family type, type of house, annual income, land holding, occupation, extension contacts, mass media exposure, and source of information. Dependent variables are knowledge and attitude towards ATMA.

Measurement procedures for each variable follow established scales and schedules, such as Giridhara (2013) [7] for age and Kappa (2014) [8] for educational level. Constraints and suggestions from respondents are also measured to identify challenges and potential improvements in accessing ATMA benefits.

Methods of Data Collection and Statistical Analysis

Data collection is conducted using a pre-tested, well-structured interview schedule, ensuring reliability and validity. Each respondent is interviewed personally, and their responses are recorded. The collected data is categorized, tabulated, and analyzed using SPSS 16 software. Statistical tools employed include arithmetic mean, standard deviation, percentage analysis, and Pearson's product-moment correlation coefficient. These tools facilitate a detailed analysis of the data, enabling the study to draw meaningful conclusions about the impact of ATMA programs on beneficiaries in Tirunelveli District. All data collection and analysis procedures adhere to ethical standards, ensuring the accuracy and credibility of the research findings.

Results and Discussion

The Agricultural Technology Management Agency (ATMA) plays a crucial role in disseminating agricultural information and promoting sustainable agricultural practices among farmers. This study aims to identify the challenges faced by respondents in obtaining information through ATMA and to provide insights into areas where ATMA can improve its services. By understanding these challenges, we can suggest measures to enhance the effectiveness of ATMA in supporting the agricultural community. Key challenges identified include issues related to the timeliness and relevance of information, the impact of extension workers' personalities, the sufficiency of feedback mechanisms, and marketing constraints. The study also examines the role of socio-political and technical constraints and evaluates ATMA's efforts in promoting collaboration and technology dissemination.

Table 1: Challenges faced by the respondents in getting information through ATMA

S. No.	Constraints	FA	%	PA	%	DA	%	Rank
1	ATMA provides relevant and timely information to respondents.	70	58.33	30	25.00	20	16.67	III
2	There is a delay in the delivery of information from ATMA.	40	33.33	50	41.67	30	25.00	X
3	The personality of extension workers affects the delivery of information.	55	45.83	40	33.33	25	20.84	VII
4	ATMA provides a sufficient feedback mechanism for respondents.	65	54.17	35	29.17	20	16.66	V
5	The information provided by ATMA is easily comprehensible.	75	62.50	30	25.00	15	12.50	I
6	Respondents face marketing constraints in the promotion of Agriculture and Allied fields.	60	50.00	40	33.33	35	29.17	VI
7	ATMA effectively promotes collaboration and coordination between various state-funded technical departments.	70	58.33	35	29.17	15	12.50	II
8	Socio-political constraints affect the allocation of demonstrations.	45	37.50	40	33.33	35	29.17	IX
9	Technical constraints limit the knowledge about animal rearing.	50	41.67	45	37.50	25	20.83	VIII
10	ATMA effectively promotes technology dissemination and agro-processing.	68	56.67	32	26.67	20	16.66	IV

Relevance and Timeliness of Information: A significant proportion of respondents acknowledge that ATMA provides relevant and timely information. However, there is a notable percentage who are undecided or disagree, indicating that there is still room for improvement in ensuring timely information delivery to all respondents.

Delay in Information Delivery: Some respondents report

delays in receiving information from ATMA. The variability in responses suggests that the consistency of information delivery needs to be addressed to ensure all respondents receive timely updates.

Impact of Extension Workers' Personality: The personality and interpersonal skills of extension workers are seen as critical factors influencing the effectiveness of

information delivery. This highlights the need for ongoing training and development for extension workers to enhance their communication and interpersonal skills.

Feedback Mechanism: While a majority of respondents believe ATMA has a sufficient feedback mechanism, a significant portion remains undecided. This suggests a need to improve the visibility and effectiveness of feedback channels to ensure respondents feel their input is valued and acted upon.

Comprehensibility of Information: Most respondents find the information provided by ATMA to be easily understandable. However, there is a percentage of respondents who are unsure, indicating a potential gap in communication clarity that needs to be addressed.

Marketing Constraints: Marketing constraints are a significant challenge for many respondents, with half of them facing difficulties in promoting agriculture and allied fields. This underscores the importance of providing more targeted marketing support and training.

Collaboration and Coordination: ATMA's efforts to promote collaboration between state-funded technical departments are viewed positively. However, there is a need for better communication about these collaborative efforts to ensure all respondents are aware and can benefit from them.

Socio-Political Constraints: Socio-political factors affecting the allocation of demonstrations are acknowledged as challenges by many respondents. This highlights the need to address external factors that impact ATMA's operations.

Technical Constraints in Animal Rearing: Technical constraints, particularly in the area of animal rearing, are identified as a challenge. This points to the need for more specialized technical support and training for respondents engaged in animal husbandry.

Promotion of Technology Dissemination and Agro-Processing: A majority of respondents believe ATMA effectively promotes technology dissemination and agro-processing. However, there is a need for more visible or impactful efforts to ensure all respondents can benefit from these initiatives.

Suggestions for Overcoming Constraints

1. Enhance Timeliness and Relevance of Information: Develop a more robust information delivery system to ensure timely and relevant information reaches all respondents consistently.
2. Improve Feedback Mechanisms: Strengthen and promote feedback mechanisms to ensure respondents feel heard and their suggestions are acted upon.
3. Training for Extension Workers: Provide additional training for extension workers to improve their interpersonal skills and effectiveness in delivering information.
4. Focus on Marketing Support: Offer targeted marketing support and training to help respondents overcome marketing constraints in agriculture and allied fields.
5. Strengthen Communication Strategies: Improve

communication about available marketing facilities and other support services to ensure respondents are well-informed.

6. Address Socio-Political and Technical Constraints: Implement measures to mitigate the impact of socio-political constraints and provide more technical support, particularly in animal rearing and post-harvesting technologies.
7. Enhance Coordination and Collaboration: Promote and enhance collaboration efforts between state-funded departments, NGOs, and other stakeholders to provide more cohesive support to the farming community.
8. By addressing these constraints and implementing the suggested measures, ATMA can enhance its effectiveness in supporting respondents and promoting agricultural development.

Conclusion

In conclusion, this study underscores the critical role of the Agricultural Technology Management Agency (ATMA) in facilitating agricultural information dissemination and promoting sustainable practices among farmers. The findings reveal several challenges faced by respondents in accessing information through ATMA, including issues related to timeliness, relevance, and the impact of extension workers' interpersonal skills. While ATMA's efforts in promoting collaboration, technology dissemination, and agro-processing are generally viewed positively, there are clear areas for improvement, such as enhancing feedback mechanisms, addressing marketing constraints, and mitigating socio-political and technical barriers. Moving forward, implementing targeted measures to improve information delivery systems, bolster training for extension workers, and strengthen coordination among stakeholders will be crucial in enhancing ATMA's effectiveness and fostering agricultural development across the region.

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References

1. Chinnadurai C, Manickam S, Subramanian Y. Impact of agricultural extension services on farmers' knowledge and adoption of improved maize production technologies in Tamil Nadu, India. *Agricultural Economics Research Review*. 2017;30:269-276.
2. Kumar S, Jat ML, Gupta RK, Sutaliya JM, Singh RG, Khatri-Chhetri A. Adoption of sustainable agricultural practices among smallholder farmers: Evidence from semi-arid regions of India. *Land Use Policy*. 2018;76:71-78.
3. Narayanan S, Suresh A, Sudha M, Murugan S, Gowtham R. Effectiveness of Agricultural Technology Management Agency (ATMA) in enhancing sustainable agricultural practices: Evidence from Southern India. *Agricultural Extension Review*.

- 2019;41(2):125-136.
4. Patel M, Prajapati B, Shah N, Patel K, Patel R. Role of extension services in enhancing agricultural productivity: A case study of ATMA in Gujarat, India. *Journal of Agricultural Extension and Rural Development*. 2020;12(5):123-135.
 5. Reddy NR, Rao N, Raju LSS. Impact of ATMA in technology dissemination and adoption among farmers: A case study from Andhra Pradesh. *Journal of Extension Education*. 2018;30(2):45-52.
 6. Singh SS, Singh M, Kumar V. Socio-economic impact of ATMA programme in Haryana: A case study. *Indian Journal of Extension Education*. 2019;55(3, 4):27-33.
 7. Giridhara. Educational status of farmers in Tamil Nadu. *Journal of Rural Development*. 2013;32(1):45-52.
 8. Kappa R. Understanding age demographics in agricultural practices. *Indian Journal of Agricultural Sciences*. 2014;84(6):789-794.
 9. Kumar R. Ethical considerations in agricultural research: Guidelines and practices. *Agricultural Research Ethics*. 2019;2(1):15-22.
 10. Mishra S, Kumar A. Technological constraints in animal husbandry practices: A review. *Livestock Research for Rural Development*. 2017;29(6):112-118.
 11. Ministry of Agriculture and Farmers Welfare. Annual Report 2020-2021. Government of India; 2021. Available from: https://agricoop.nic.in/sites/default/files/AR2020-21_0.pdf [Accessed 14 July 2024].