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Libraries as Catalysts for Addressing Information Gaps in Accessing Agricultural Policies: A Study among Farmers in Southern Karnataka

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Abstract: This study investigates the socio-economic profiles, land ownership, and perceptions of farmers in Southern Karnataka regarding government policies and agricultural programs. Data analysis reveals that while a large number of farmers show interest in various government schemes, a significant awareness gap persists. Most farmers in the region have small-scale, irrigated farms and earn below 1 lakh annually, which impacts their capacity to adopt costly technologies. Findings indicate that government initiatives like the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) and Organic Farming Policy have relatively higher uptake, while market-oriented policies remain largely underutilized. Recommendations include improved outreach, training, and simplified access to information, especially for marginalized farmers. This paper emphasizes the need for accessible digital solutions tailored to the unique needs of Southern Karnataka farmers to enhance technology adoption and government policy engagement.

Keywords: *Southern Karnataka farmers, Libraries as catalyst, agricultural technology, government policies, digital accessibility, small-scale farming, awareness gap*

Introduction

The agricultural sector remains a cornerstone of India's economy, with Karnataka being a prominent contributor, especially in diverse crop production. However, the adoption of government policies and digital tools is essential to boost productivity, resilience, and income levels among farmers. In Southern Karnataka, where small and marginal farmers dominate, challenges like limited income, digital literacy, and awareness hinder the effective utilization of available schemes and technologies. This study assesses the socio-economic characteristics, land details, and the perceptions of farmers regarding government programs to understand the barriers they face. By analyzing these aspects, this paper aims to provide actionable insights to improve the accessibility and impact of agricultural policies on smallholder farmers.

1. Review of Literature

Ajith & Lakshmi, (2021) the study analyzed the farmers' perception of the benefits of agricultural schemes to encourage them to do agriculture in Tamil Nadu. The study result shows that the majority (30%) of farmers were satisfied with the support of agricultural schemes and 62% of the farmers were aware of the agricultural schemes. (Singh & Agrawal, 2020) examined and investigated current policy interventions in the field of agriculture insurance in India, and the study gives a thorough and holistic developmental and performance analytic viewpoint on agriculture insurance in India.To encourage farmers in India to obtain agriculture insurance, numerous governmental initiatives were created. The Indian government launches a new agricultural program every ten years, but due to flaws in its operations, each crop insurance program has been uneven and ineffectual. The study result shows that agriculture insurance in India is still developing in terms of coverage, scope, and exposure, but

farmers' dissatisfaction with agriculture insurance turned out to be a negative word of mouth. (K. M. et al., 2021) studied the impact of various Schemes and Programmes of the Government of India on Agriculture to increase productivity, profitability, financial inclusion, and welfare of farmers to transform them into Modern Society. This study examines the advantages and benefits of these schemes in addition to demonstrating the efficacy of several agricultural programs. Minimum Support Price (MPS), MIF, PMKSY, PMFBY, e-NAM, PM-KISAN, PMJDY, PM-KUSUM, PKVY, NAMS, and MGNREGS have all been executed by the Indian government. Kisan Suvidha, a mobile app, and innovative projects such as Kisan Rail and Krishi Udaan double farmers' income (DFI).

Along with ensuring credit availability, they also guarantee the direct benefit transfer of subsidies and payments to recipients (Iwuchukwu & Cand Igbokwe, 2012). The study's objectives are to increase rural residents' income and standard of living, help them make better use of Nigeria's rural resources and land, target and support the achievement of food security done self-sufficiency and self-reliance, and give strategic community support for land development. The Federal Department of Agriculture launched the National Accelerated Food Production Programme (NAFPP), an agricultural extension initiative, in 1972 as part of General Yakubu Gowon's administration.

Nagesha et al., (2022) conducted a study on Farmers' knowledge of PMFBY in the Tumkur District of Karnataka. Data collected from 120 farmers with structured interviews and statistical tools were used to analyze the data. The findings indicate that 53.33% of farmers have a medium knowledge level, 21.67% have a low knowledge level, and 25.00% have a high knowledge level. The study found that the following factors were positively and significantly correlated with knowledge level: age, annual income, education, land holding, farming experience, contact with and participation in extensions, scientific orientation, cosmopolitanism, achievement motivation, exposure to mass media, and crops grown (Shehrawat et al., 2020) According to the survey, 86 percent of farmers are aware of the crops covered under the Pradhan Mantri Fasal Beema Yojana (PMFBY), followed by crop insurance premiums. As a result, it is important to assess farmers' knowledge of and participation in agricultural development programs and crop insurance in the districts of Hisar and Fateh Abad in the state of Haryana. However, the majority of respondents (more than 64 %) were unaware of subsidy structure under scheme and additional benefits for small farmers. Nearly fifty percent of the respondents (52%) believe that Agricultural Mechanization for In-Situ Crop Residue Management is doing effectively. According to data on respondents' awareness of the Pradhan Mantri Krishi Sinchai Yojana (PMKSY), over half of them were aware of the program (Jamanal et al., 2019) conducted a study on farmer's knowledge about crop insurance schemes in Northern Karnataka during 2017-18. According to the study's findings, 44.17 percent of insured farmers had poor knowledge levels on crop insurance schemes, followed by medium (37.92%) and high (17.91%) levels.

Kumar et al., (2017) the study revealed that all respondents agreed that they heard of crop insurance and they were familiar with Kisan Credit Card (KCC), which shows the knowledge level of farmers regarding agricultural insurance policies. Also, 100% of farmers preferred the adoption of insurance by banks, and 90% of farmers opted for KCC and preferred crop insurance.

2. Objectives of the study

1. Farmers' perception and use of production-oriented Government policies
2. Farmers' perception and use of market-oriented Government policies
3. Farmers' perception and use of social and welfare-oriented and other Government policies

3. Research Methodology

The research has surveyed the farmers in the selected districts of Southern Karnataka. The districts considered for the study are Bangalore Urban, Chamarajanagar, Chikkaballapura, Hassan, and Mandya. The study applied a proportionate stratified sampling technique to draw the sample. 150 responses were collected from each district. Therefore, the sample size is 750. A structured questionnaire is used for data collection. It was prepared in the Kannada regional Language. Discussion and interview methods were used for data collection. The data was tabulated into SPSS and the same has been presented in the form of tables in the following section.

4. Data Presentation, analysis, and Interpretation

4.1. Socio-economic Profile of the Farmers of Southern Karnataka

Table 1: Socio-economic Profile of the Farmers

SN	Criteria	Responses	Frequency	Total
1	Gender	Male	684 (91.2%)	750 (100%)
		Female	66 (8.8%)	
3	Educational level	Literate	546 (72.8%)	750 (100%)
		Illiterate	204 (27.2%)	
5	Annual Income of the family	Less than 1 lakh	384 (51.2%)	750 (100%)
		1-5 Lakh	305 (40.7%)	
		6-10 Lakh	56 (7.5%)	
		Above 10 Lakhs	5 (0.7%)	

Table 1 shows that 91.2% of the respondents are male, this could reflect traditional gender roles in rural areas, where men are often more involved in field activities, while women may focus on household and other responsibilities. The literacy rate among farmers is relatively high at 72.8%. This suggests that most farmers have some level of education, which may positively influence their ability to understand and potentially adopt agricultural technology or government programs. However, the remaining 27.2% illiteracy rate could be a limiting factor for fully digital or complex interventions. Most farmers earn less than 1 lakh annually, with only a small percentage (0.7%) earning over 10 lakhs. This income distribution suggests that affordability could be a significant barrier to adopting new technology or services that come with high costs, as most farmers operate within limited financial means.

Table 2: Details on Agricultural lands

SN	Details on Land	Criteria	Responses	Total
a.	Do you have Your (own) land?	Yes	750(100%)	750 (100%)
		No	0(0%)	
b.	Types of land	Irrigated	649 (86.5)	750 (100%)
		Non irrigated	101 (13.5%)	
c.	Types of farmers	Marginal farmers	369 (49.2%)	750 (100%)
		Small farmers	265 (35.3%)	
		Medium farmers	75 (10.0%)	
		Big farmers	41 (5.5%)	

Table 2 shows that every respondent owns their land, indicating stable land tenure and possibly greater motivation to invest in long-term agricultural improvements. This might make these farmers more receptive to practices and technologies that enhance productivity. The majority (86.5%) of farmers have irrigated land, which is beneficial for higher crop productivity and could enhance the relevance of technology for efficient water use.

The majority 86.5% of the farmers hold irrigated land which is an opportunity or significant potential for technology adoption focused on water management and precision agriculture, as farmers with irrigated land are more likely to see immediate benefits. The dominance of marginal (49.2%) and small farmers (35.3%) highlights the prevalence of small-scale farming. These farmers might prioritize cost-effective and scalable solutions that are affordable and easy to implement, as their economic scale is limited.

4.2. Farmers' Perception and Use of Different Types of Agricultural Policies

In this section, the study has converted the farmers' statements on their perception and use of agricultural policies. The study has received seven types of statements while collecting the data for the pilot study. The same statements were converted into a seven-point scale and presented the data in the following section. Data collected on the farmers' perception and use of production-oriented, Market-oriented, social and welfare-oriented, and other agricultural policies and presented in the following section.

Table: 3 Farmers' Perception and Use of Production-oriented Agricultural Policies

SN	Production-oriented policies	1	2	3	4	5	6	7

a.	Pradhan Mantri Fasal Bima Yojana (PMFBY)	115 (15.3%)	131 (17.5%)	118 (15.7%)	304 (40.5%)	79 (10.5%)	3 (0.4%)	0 (0%)
b.	Krishi Bhagya Scheme	28 (3.7%)	139 (18.5%)	67 (8.9%)	356 (47.5%)	159 (21.2%)	0 (0%)	1 (0.1%)
c.	Surya Raitha Scheme	6 (0.8%)	104 (13.9%)	64 (8.5%)	410 (54.7%)	165 (22.0%)	0 (0%)	1 (0.1%)
d.	Soil Health Card Scheme	13 (1.7%)	117 (15.6%)	85 (11.3%)	369 (49.2%)	162 (21.6%)	1 (0.1%)	3 (0.4%)
e.	Pradhan Mantri Krishi Sinchai Yojana (PMKSY)	28 (3.7%)	171 (22.8%)	69 (9.2%)	307 (40.9%)	172 (22.9%)	1 (0.1%)	2 (0.3%)
f.	Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)	258 (34.4%)	165 (22.0%)	15 (2.0%)	51 (6.8%)	23 (3.1%)	238 (31.7%)	0 (0%)
g.	Online pesticide registration	0 (0%)	116 (2.1%)	68 (9.1%)	301 (40.1%)	362 (48.3%)	1 (0.1%)	2 (0.3%)

(Scale used: 1=I know I am using; 2=I know I am not using; 3=I don't know, not interested in using; 4=I am interested in using But I don't know 5=I am not interested to know/use; 6=I am using, its useful; 7=I am using, not useful)

As per Table 3, 15% of farmers indicated as I know, that I am using PMFBY, indicating a moderate level of awareness and use. However, 40.5% of them are interested in using it but do not know how suggesting an awareness gap. Addressing this could improve uptake, especially as it involves crop insurance. The adoption of Krishi Bhagya and Surya Raitha Schemes is low and a majority of farmers are interested in using them but lacking knowledge on how to proceed. This underscores the importance of simplifying access and better communicating these programs to farmers. 34.4% of farmers are using PM-KISAN, indicating it might be more accessible or straightforward to engage with, as it provides direct income support.

Table 4: Farmers' Perception and Use of Market-oriented Policies

SN	Market-oriented Policies	1	2	3	4	5	6	7
1	National Agriculture Market (eNAM)	0 (0%)	19 (2.5%)	101 (13.5%)	385 (51.3%)	242 (32.3%)	1 (0.1%)	2 (0.3%)
2	AGMARKNET	1 (0.1%)	16 (2.1%)	66 (8.8%)	310 41.3%)	354 (47.2%)	1 (0.1%)	2 (0.3%)

(Scale used: 1=I know I am using; 2=I know I am not using; 3=I don't know, not interested in using; 4=I am interested in using But I don't know 5=I am not interested to know/use; 6=I am using, its useful; 7=I am using, not useful)

eNAM and AGMARKNET have very little usage, with no farmers using eNAM and only 0.1% using AGMARKNET. The majority of farmers (51.3% for eNAM, and 41.3% for AGMARKNET) show interest in these programs but lack knowledge. This suggests that these market-oriented digital tools may need more outreach or training to highlight their potential benefits in connecting farmers to larger markets.

Table 5: Farmers' Perception and Use of Social and Welfare-oriented Policies

SN	Social and Welfare-oriented Policies	1	2	3	4	5	6	7
1	Rashtriya Krishi Vikas Yojana (RKVY)	8 (1.1%)	23 (3.1%)	61 (8.1%)	396 (52.8%)	262 (34.9%)	0 (0%)	0 (0%)

2	Organic Farming Policy	444 (59.2%)	37 (4.9%)	20 (2.7%)	184 (24.5%)	64 (8.5%)	0 (0%)	1 (0.1%)
3	Raitha Sanjeevini Scheme	1 (0.1%)	20 (2.7%)	33 (4.4%)	439 (58.5%)	254 (33.9%)	1 (0.1%)	2 (0.3%)
4	National Food Security Mission (NFSM)	5 (0.7%)	95 (12.7%)	33 (4.4%)	256 (34.1%)	348 (46.4%)	6 (0.8%)	7 (0.9%)
5	Direct Benefit Transfer in Agriculture	1 (0.1%)	21 (2.8%)	61 (2.8%)	309 (41.2%)	353 (47.1%)	3 0.4%)	2 (0.3%)
6	Kisan Call Center	1 (0.1%)	32 (4.3%)	73 (9.7%)	415 (55.3%)	226 (30.1)	3 (0.4%)	0 (0%)
7	Karnataka State Seed Certification Agency	0 (0%)	16 (2.1%)	36 (4.8%)	443 (59.1%)	252 (33.6%)	1 (0.1%)	2 (0.3%)

(Scale used: 1=I know I am using; 2=I know I am not using; 3=I don't know, not interested in using; 4=I am interested in using But I don't know 5=I am not interested to know/use; 6=I am using, its useful; 7=I am using, not useful)

As shown in above Table 5, the majority 59.2%, of farmers are aware of using the policy on organic farming, which indicates a significant interest in organic farming practices, potentially driven by the demand for organic produce or government incentives. The majority of farmers have shown interest in RKVY and Raitha Sanjeevini (52.8% and 58.5%, respectively) but are underutilized due to limited awareness, reflecting a recurring issue across welfare policies where information dissemination could play a key role in improving access.

Table 6: Farmers' Perception and Use of Other Policies

SN	Government policies and programs	1	2	3	4	5	6	7
1	Agricultural Credit Policy	3 (0.4%)	31 (4.1%)	43 (5.7%)	433 (57.7%)	236 (31.5%)	1 (0.1%)	3 (0.4%)
2	Paramparagat Krishi Vikas Yojana (PKVY)	6 (0.8%)	173 (23.1%)	59 (7.9%)	310 (41.3%)	197 (26.3%)	1 (0.1%)	4 (0.5%)
3	Kisan Credit Card Scheme	21 (2.8%)	217 (28.9%)	84 (11.2%)	313 (41.7%)	113 (15.1%)	0 (0%)	2 (0.3%)
4	Agriculture infrastructure Fund	3 0.4%)	36 (4.8%)	69 (9.2%)	283 (37.7%)	353 (47.1%)	4 0.5%)	2 (0.3%)
5	ATMA scheme	1 (0.1%)	21 (2.8%)	70 (9.3%)	295 (39.3)	360 (48.0%)	1 0.1%)	2 (0.3%)

(Scale used: 1=I know I am using; 2=I know I am not using; 3=I don't know, not interested in using; 4=I am interested in using But I don't know 5=I am not interested to know/use; 6=I am using, its useful; 7=I am using, not useful)

It's evident from above table 6 that, more farmers are interested in using the Agricultural Credit Policy and Kisan Credit Card Scheme but low actual usage, pointing to challenges in understanding, accessing, or meeting eligibility for these credit programs.

Overall, the above tables illustrated that while there is substantial interest among farmers in Southern Karnataka to engage with government schemes and technological tools, awareness and accessibility barriers are significant. Many farmers are unaware of how to access these programs despite being interested, underscoring a need for targeted outreach and support to bridge these knowledge gaps. For more effective adoption, it would be crucial to simplify program requirements and enhance direct communication and training tailored to these farmers' socio-economic conditions and land types.

5. Major Findings

- The majority of farmers in Southern Karnataka are male, literate, and earn less than 1 lakh annually. This reflects the economic constraints and traditional gender roles that may influence their farming practices and adoption of technology. All respondents own their land, with a high proportion (86.5%) of irrigated land, which

is favorable for agricultural productivity. However, most farmers are marginal or small-scale holders, highlighting a need for policies tailored to smaller operations.

- **Awareness and Usage of Government Schemes:**

o Production-oriented Policies: PM-KISAN has the highest uptake, but other schemes, such as PMFBY and Krishi Bhagya, are less utilized despite interest, suggesting a need for improved dissemination and access to information.

o Market-oriented Policies: Minimal usage of eNAM and AGMARKNET points to a lack of awareness about digital marketplaces, limiting farmers' market reach.

o Social and Welfare Policies: Organic Farming Policy is well-received, while others, like RKVY, face limited adoption due to low awareness levels.

The study found that, despite interest, a significant percentage of farmers lack sufficient knowledge or access to government schemes. This awareness gap is a key barrier that prevents them from fully leveraging the benefits of available policies. The study results aligns with "despite high interest, approximately 40.5% of farmers are unfamiliar with application procedures for schemes like PMFBY, which aligns with broader findings on information dissemination challenges in agricultural policy implementation (Karnataka Department of Agriculture, 2022)."

6. Libraries as Catalysts for Addressing Information Gaps in Accessing Agricultural Policies

The Agricultural libraries and agricultural information kiosks can play a transformative role in bridging the gaps identified in farmers' awareness and use of agricultural policies and digital tools with the following initiatives.

a) **Information Resource Centers:** Libraries, especially rural and community libraries, can serve as information hubs where farmers access printed and digital materials on agricultural policies, schemes, and technology use. Libraries could maintain a collection of easy-to-understand guides on government policies like PMFBY, eNAM, and PM-KISAN, including eligibility criteria, application steps, and benefits.

b) Digital Literacy and Training Programs: Libraries can organize regular digital literacy workshops, introducing farmers to essential tech skills and navigating agricultural apps or government portals. Partnering with agricultural and technology experts, libraries can host training sessions to teach farmers how to use smartphones, websites, and applications that facilitate agricultural market access and policy information.

c) Outreach and Awareness Campaigns: Libraries can work with local government bodies to host awareness campaigns about lesser-known schemes, especially market-oriented policies like eNAM and AGMARKNET. Using posters, pamphlets, and audiovisual material in regional languages, libraries can help communicate critical information about agricultural policies and technological tools available to farmers.

d) Access to Digital Infrastructure: Libraries can offer internet access and digital devices, such as tablets or computers, for farmers to explore agricultural websites, register for schemes, and apply for benefits online. Libraries can provide support for online form submissions, ensuring farmers are comfortable navigating digital platforms and understanding the process.

e) Connecting Farmers with Agricultural Experts: Libraries could partner with agricultural extension services to establish periodic Q&A or consultation sessions with experts, where farmers can ask questions about government policies, crop management, and technology. Libraries might use video conferencing to connect farmers with experts, broadening access to up-to-date agricultural knowledge without needing in-person attendance.

f) Community Engagement and Support: Libraries can create community-based learning groups, where farmers share experiences, successful practices, and challenges with government policies and technology. By forming such peer networks, libraries enable farmers to learn from each other, share helpful information, and build confidence in adopting digital tools.

g) Incorporating Local Language and Context-Specific Information: Libraries can ensure that all resources, guides, and training materials are available in local languages and adapted to the cultural and economic context of farmers in Karnataka, making them more relevant and accessible.

h) Continuous Feedback and Improvement: Libraries can collect feedback from farmers on their informational needs, challenges in using technology, and understanding of policies. This feedback can be used to update resources, plan more relevant training sessions, and even inform government bodies of recurring challenges.

Therefore, libraries have the potential to be powerful community resources, supporting farmers in understanding and utilizing agricultural policies and technology by providing accessible, locally relevant information and digital resources.

7. Suggestions and Conclusion

It's also suggested that agricultural information centres and agricultural extension officers need to develop targeted outreach and educational campaigns on government policies and digital tools, particularly for market-oriented schemes like eNAM, to bridge the awareness gap. There is a need to provide simplified access to schemes by streamlining application processes for policies, focusing on user-friendly and regional language interfaces to cater to the literacy levels of the farmers. Organizing digital literacy and technology training tailored to small and marginal farmers, ensuring they can navigate agricultural apps and platforms with ease.

To conclude, this study highlights the socio-economic and digital challenges faced by farmers in Southern Karnataka. While there is a keen interest among farmers to adopt agricultural policies and technology, a significant awareness gap limits their engagement. Production-oriented policies like PM-KISAN are relatively well-utilized, but market-oriented and welfare policies remain underused due to accessibility issues. Addressing these barriers requires a collaborative effort to enhance awareness, simplify procedures, and offer training tailored to the needs of small-scale farmers. Effective policy implementation and digital literacy programs can pave the way for increased agricultural productivity and economic sustainability in the region. Since government policies and programs are meant for the overall development of the farmers, the libraries and the library personnel need to join hands with agricultural information centers and agricultural extension officers to raise awareness among the farmers. The agricultural libraries and public libraries can address this information gap through their pedagogical approach in designing and developing extension and outreach programs.

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