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Performance of The Punjab Agricultural University Farmer Information Centre Extension Model

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ABSTRACT

The Punjab Agricultural University (PAU) Farmer Information Center Extension Model was established in December 2020. The objective of the study was to gather information from focus groups with stakeholders on the model's perceived strengths and limitations as well as appropriate corrective and developmental strategies. Using a purposive and random sampling technique, 220 respondents in total were selected, comprising 110 farmers who were beneficiaries (10 from each Farmer Information Center) and 110 farmers who were non-beneficiaries from villages near the Farmer Information Center (FIC). The study showed that 51 respondents (46.36%) preferred monthly visits. The majority of farmers (92.72%) had access to PAU Publications and 70.09 % had the benefit of seeds being available on time. Farmers had increasing benefits through the services provided under PAU-FIC Centres, over the span of years. The majority of the farmers were satisfied with the services provided at the FIC and the functioning of the FIC a good number of the demonstrations are been held in the FIC.

Key Words: Agriculture, Extension, Extension Model, Farmer Information Centre, Stakeholders, Farmers.

INTRODUCTION

In India majority of the farmers are small and marginal. The main challenge is an inadequate public extension system and advisory services, unlike most Asian and African countries using different models (Anderson and Feder, 2007). Several unique approaches were launched as pilot projects around the world. Each technique had strengths and limitations that were not anticipated during deployment but were discovered during the approach review. (Davis 2008) outlined a novel extension method in Africa in which the SG-2000 program first sought a pool of relevant technology to be distributed before collaborating closely with government officials through the use of national extension employees. These changes altered the approaches throughout the system rather than the system itself. In 2001, NAADS launched its novel approach to public-private extension in Uganda, showcasing its capabilities in decentralization, outsourcing, farmer empowerment, market orientation, and cost recovery (Anderson, 2007). In an economy that is primarily rural and heavily reliant on agriculture for the lives of rural households, the promotion of agricultural growth is crucial to ensuring equitable access to food and nutritional security within the rural region (Mahendra 2014).

Indian farmers are facing a number of development issues. The depletion of natural resources makes a number of factors, such as the scarcity of land and water resources, which are already a problem, worse. Additionally, climatic changes, shifts in demand and consumption patterns towards high-value agriculture, growing population pressures, and the liberalization of trade all play a role in exacerbating these challenges (Lele 2010). The recent surge in global food prices and the concurrent rise in inflation rates have presented favourable circumstances for enhancing farmers' profitability. In order to fully comprehend the advantages of increased pricing, it is imperative for farmers to have access to a broader spectrum of information. This knowledge

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Sr.No.	Block	Villages
1	Jagraon	Pabbian, Attiana,Mohie
2	Siddhwan Bet	Leelan,Bhundri, Rauwal
3	Mangat	Noorpur Bet
4	Dehlon	Jassar
5	Ludhiana II	Kanech
6	Pakhowal	Bihla kheri , Jodhan
	Total	**11**

should encompass not just production methods but also postharvest procedures, opportunities to access profitable markets, price information, and strategies for business development (Sulaiman 2003). The integration of this information could be facilitated by services that provide support for its utilization. For instance, the inclusion of technical information necessitates the provision of substantiating evidence from credible sources pertaining to the technology as well as the identification of accessible references. The significance of agricultural extension in enhancing agricultural progress in India is currently being acknowledged and supported through escalating investments.

Since the public extension system is often questioned for its efficiency and efficacy, there is always a need for alternative techniques to complement it. These include private, NGO, public-private, fee-based, farmers' organizations, and privatized extension services. No extension approach is flawless but they have strengths and weaknesses that might be considered in future farmer-friendly extension initiatives. Coordinated planning, execution (including field visits), task division, and information and resource sharing are all part of innovative initiatives, which include official institutional linkages and unofficial networks among extension service providers. How organizations, people, and local communities build and maintain informal networks is the fundamental difference from formal institutional relationships.

As a pilot initiative in one block of the Ludhiana District, PAU created the PAU Farmer Information Centre Linkage Extension Model in December 2020 to enhance the public extension system's outreach to the vast majority of farmers dispersed across a variety of climatic and geographic areas. Later, the strategy was applied to different blocks to strengthen the extension network. This model trained farmers in improved farm methods with the support of the local Agricultural Development Officer, the Multipurpose Society Secretary, and Punjab Agricultural University Extension Education Department experts. Farmers were demonstrated superior PAU varieties in their fields, resulting in farmer-to-farmer learning. The Multipurpose Society Secretary became a PAU-FIC para extension agent with the support of the PAU Extension Education Department. The PAU-Farmer Information Centre Extension Model was designed to connect with farmers through village-level liaison bodies. The selection of these bodies is predicated on their participation in delivery methods. The Departments developed two primary categories of Farmer Information Centers: those that collaborate with agricultural development or extension officers and those that work with cooperative society secretaries. The Departments of Extension Education established these centers with the objectives of establishing demonstration centres and identifying suitable farming systems, assessing farmers' training needs and providing appropriate training and creation of model villages to enhance the adoption of PAU-recommended technologies and encouraging adopting villages to use the farm-home integrated unit as a development model.

MATERIAL AND METHODS

The investigation used an ex-post fact design with the assistance of a questionnaire survey instrument in correlation with structured and flexible interview schedules. Respondents were categorized into three groups: beneficiary farmers, non-beneficiary farmers and extension employees of respective areas. The extension workers included scientists, secretaries of multi-cooperative organizations, and extension

Table 1. Distribution of beneficiary farmers based on frequency of visits to the FIC (n=110)

Sr. No	Category	Frequency (%)
1.	On weekly basis	37(33.63)
2.	Monthly	51(46.36)
3.	Quarterly	17(15.45)
4.	Not at all	5(4.54)

Table 2. Distribution of farmers based on the facilities available at the centre. (n=110)

Sr.No.	Facility	Frequency (%)
1.	PAU Publications (Package of practices of *Rabi/kharif*/Vegetables /Fruits /Flowers)	102 (92.75)
2.	Leaflets and brochures on agricultural technologies	95 (86.40)
3.	Improved crop varieties	110 (100)
4.	Display material	110 (100)

Table 3. Distribution of farmers on the basis of time of availability of seeds. (n=110)

Sr.No	Timing	Frequency (%)
1.	Earlier than expected time	11(10.00)
2.	On expected time	78(70.10)
3.	Delay	21(19.10)

Table 4. Distribution of farmers based on the benefits received from services offered by PAU-FIC Centres. (n=110)

Sr.No	Demonstrated technology under continued adoption	Total number of farmers in a particular year		
		2020-2021	2021-2022	2022-2023
		Frequency (%)	Frequency (%)	Frequency (%)
1.	Paddy	65(59.10)	91(82.70)	104(94.55)
2.	Wheat	48(43.62)	64(58.20)	98(89.10)
3.	Oil Seed	26(23.62)	34(30.10)	69(62.70)
4.	Awareness of secondary occupations	18(16.35)	40(36.36)	46(41.80)
5.	Conservation techniques	42(38.20)	57(51.80)	65(59.10)

Table 5. Distribution of farmers on the basis of the satisfaction level of the farmers from the services offered at FIC. (n=110)

Sr.No	Satisfaction level	Frequency (%)
1.	Satisfied	78(70.91)
2.	Not at all satisfied	08(07.29)
3.	Partially satisfied	24(21.80)

functionaries supported by the State Department of Agriculture. Later, ten farmers who were to benefit were selected from each block and the community in which the FIC was situated. A total of 110 beneficiary farmers and 110 non-beneficiary farmers made up the sample size. Ten non-beneficiary farmers were chosen from the surrounding communities. In addition, eight extension workers were specifically selected for this study.

RESULT AND DISCUSSION

A total of 110 beneficiary farmers were surveyed and categorized based on the frequency of their visits to the Farmers' Information Centre (FIC). Notably, 46.36 per cent of farmers visited once a month. This indicates a common trend

Table 6. Distribution of farmers on the basis of their satisfaction levels regarding the functioning of PAU-FIC. (n=110)

Sr.No	Item	Frequency (%)
1.	Information on seed availability at the village level	80(72.72)
2.	Availability of seeds based on requirements/demand	84(76.36)
3.	Reduction in transaction or transportation costs in getting the seeds	84(76.36)
4.	Establishing demonstrations of improved crop varieties	81(73.63)
5.	Enhancing the learning and visibility of the demonstrated technology among neighbouring farmers	78(70.90)
6.	Organizing of field days for demonstrations" set up by farmers	83(75.45)

Table 7. Distribution of farmers on the basis of the demonstrations conducted for PAU-recommended technologies under the PAU FIC (2020-2023)(*)

Sr.No	Demonstration	Variety / Technology	f*
1.	Varietal demonstration of Paddy	PR130	59
		PR126	91
2.	Varietal demonstration ofWheat	PBW 826	47
		Punjab sunehri (766)	8
3.	Promotion of bio fertilizers	Wheat	61
		Paddy	67
4.	Varietal demonstration ofOil seeds (Mustard)	GSC -7	72
5.	Varietal demonstration ofMaize	PMH-13	83
6.	Introduction of leguminous crops in crop rotations	SML 1827	71
		SML-668	42
7.	Cultivation of Turmeric	Punjab haldi 2	46
8.	Mushrooms cultivation	Dhingri mushrooms	46
		Button mushrooms	51
9.	Laying down of kitchen garden	Kitchen garden	159
10.	Resource conservation technologies	DSR	172
		Happy seeder	59

*= *total number of demonstrations in last three years*

where a significant proportion of individuals prefer engaging in activities monthly. On the other hand, the group with the least frequency and percentage of trips to the PAU FIC was represented by the never category. There were just five persons that fit this description, which makes up a meager 4.54 percent of all participants. This indicated that relatively few people decided not to participate at all.

Most of the participants had access to the publications and materials from PAU in agricultural technology, which underlines the importance of informational support. As for the sources of information, all participants received information on improved crop varieties and display materials, which means equal access to these resources. All eleven FICs offered the facilities and the farmers stressed the need to obtain the up-to-date PAU publications and informative and detailed leaflets and folders on different agricultural technologies.

The data (Table 3) demonstrated the farmers' perception of the timely availability of seeds. 70.10 per cent of the participants responded that they received seeds at proper time, which shows that there was efficient management of seed distribution that observes the expected time of delivery. A very small percentage (10. 0%) reported that they received seeds before the expected time, while 19. 10% of the respondents complained of delayed delivery of seeds. Those farmers who complained of delayed seed

availability blamed it on their own inability to pick seeds from the PAU FIC when they got there and synchronize with their planting calendar.

In paddy cultivation, the use of contemporary farming methods has steadily increased. The adoption rate of advanced practices in paddy farming increased dramatically from 59.10% in 2020–2021 to 82.70% in 2021–2022, reaching a peak of 94.55% in 2022–2023. Comparably, the adoption of technology in wheat production increased steadily, with a starting point of 43.62% in 2020–2021 and a peak of 58.20% in 2021–2022, before ultimately reaching 89.10% in 2022–2023. Technology adoption in oilseed farming, while growing, saw a more modest increase. Adoption rates started at 23.62% in 2020-2021, rose to 30.10% in 2021-2022, and reached 62.70% in 2022-2023, suggesting slower progress compared to paddy and wheat farming sectors.

Awareness of subsidiary occupations among farmers also saw significant growth, with awareness levels increasing from 16.35% in 2020-2021 to 36.36% in 2021-2022, and further to 41.80% in 2022-2023, indicating farmers' increasing recognition of diversifying income sources. The adoption of conservation techniques showed a consistent increase, starting from 38.20% in 2020-2021, rising to 51.80% in 2021-2022, and further to 59.10% in 2022-2023. This trend reflected growing awareness and commitment among farmers to integrate sustainable farming practices. In conclusion, oilseed farming has advanced slowly than paddy and wheat farming, despite the latter two showing notable increase in technology adoption, likely due to government initiatives and resource availability. Farmers were becoming more committed to implementing conservation strategies for sustainable agricultural practices and becoming more conscious of the value of diversifying their revenue streams through side businesses.

Assessing farmers' satisfaction with services provided by farmer information centers (FICs) is an ongoing process. The data (Table 5) show how participants rated their satisfaction levels. A significant majority, 70.91 percent, reported being satisfied with the services, indicating positive reception. About 21.80 percent expressed moderate satisfaction, suggesting areas for improvement. A small minority, 7.29 percent, reported complete dissatisfaction, highlighting specific issues needing attention. Overall, the assessment reflects generally positive feedback towards FIC services, with identified areas for enhancement.

A well-developed farmer information center is crucial for farmers as it offers information through field days, demonstrations, training, and information access. Table 6 presents other areas of PAU-FIC operations that have elicited a lot of satisfaction among the farmers. The table provides information on farmers' satisfaction with various aspects of agricultural practices and services that are essential for farming. 72.72% of the farmers expressed satisfaction with the information provided to them regarding village-level seed availability, which aided in their planning for agricultural endeavors. Further, a high level of satisfaction was recorded on seed availability; 76.36% of the farmers were satisfied with the availability of seeds that meet their needs, thus implying that they were able to access seeds that are crucial for the production of crops. Likewise, an equal percentage of farmers (76.36%) appreciated the decrease in transaction and transportation costs of acquiring seeds, thus making seeds cheaper and readily available. Farmers perceived that demonstrations of improved crop varieties were as important learning and decision-making tools by 73.63% of the farmers. Furthermore, 70.90% of the farmers expressed satisfaction with the enhanced awareness and exposure of agricultural technologies among their surrounding farms, emphasizing the effective exchange of knowledge and technology within the community, leading to an improvement in agricultural practices. Ultimately, 75.45% of the farmers expressed satisfaction with the way field days are organized to allow for farmer demonstrations, which supports the study's claim that field days are a good way to learn novel concepts. The high levels of satisfaction seen in these crucial areas—seed availability, cost-cutting, and knowledge accessibility—indicate that these programs have

proven to be highly beneficial to the farming community and may even enhance crop productivity and the sustainability of agriculture as a whole. These practices should be sustained and developed further to achieve even higher levels of farmer welfare and the sector's growth.

Agricultural demonstrations educate farmers with adequate skills, enable them to implement new technologies and advocate for proper farming. From the year 2020 to 2023, the PAU FIC program performed numerous demonstrations of various technologies. For instance, in Paddy varietal demonstrations, PR130 was used in 59 cases while PR126 was used 91 times. Likewise, Wheat varietal demonstrations included PBW 826 in 47 demonstrations and Punjab Sunehri 766 in 8 demonstrations, where PBW 826 had higher yield potential. Biofertilizers were demonstrated through 61 no. for Wheat and 67 no. for Paddy to improve the crop yield. In Mustard cultivation, GSC-7 was illustrated in 72 cases, which proves that this variety has a high yield. Maize had the PMH-13 variety demonstrated in 83 shows. New leguminous crops were introduced including SML 1827 with 71 demonstrations and SML-668 with 42 demonstrations while Punjab Haldi 2 was found suitable for successful demonstration of Turmeric in 46 demonstrations. Among the mushrooms, Dhingri mushrooms were demonstrated in 46 demonstrations and Button mushrooms in 51 demonstrations, which are good for farming. Kitchen gardens were initiated 159 times, which helped in growing most of the household vegetables. Further, the other conservation technologies like DSR done in 172 demonstrations and Happy Seeder in 59 demonstrations also focused on the need to adopt sustainable technologies for improving the productivity of agriculture. Every demonstration category entailed certain activities, and the frequency signified the number of times or the number of people involved in a particular instance.

CONCLUSION

The PAU Farmer Information Center Extension Model was launched as a trial project in a single Ludhiana District block. This initiative was meant to improve the coverage of the public extension system to many farmers located in different climatic and geographical areas. This can also help to bring down the cultivation costs of farmers to the barest minimum since seeds and facilities were made available at the centre in time. Several research institutions may use this site-specific methodology to connect more farmers, both local and remote, with the technology developed there.

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