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Perceived constraints and suggestions of beneficiaries towards the agricultural technologies under crop based module of farmer FIRST programme

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Abstract

The present study was undertaken to identify and analyze the problems faced by beneficiaries under the Crop-Based Module of the Farmer FIRST Programme (FFP) in the Balaghat district of Madhya Pradesh. The Farmer FIRST Programme, conceptualized by the Indian Council of Agricultural Research (ICAR), emphasizes the central role of farmers in research problem identification, prioritization, experimentation, and management under real farm conditions. The programme focuses on integrating Farmers, Farm Innovations, Resources, Science, and Technology (FIRST) to ensure participatory and need-based agricultural development. A sample of 129 farmers was purposively selected from the Lalbarra block of Balaghat district, as this block had the maximum area and participation under the Farmer FIRST Programme. Among the five modules being implemented in the area, the Crop-Based Module was specifically chosen for the study, as it encompassed the highest number of beneficiaries. The research aimed to examine farmers' problems and suggestions related to various operational aspects such as labour wages, machinery availability, technical guidance, and communication support during the agricultural year 2020–2021. An ex-post facto research design was employed to investigate the research problem. Primary data were collected through a well-structured interview schedule, and the data were statistically analyzed using the Chi-square test to determine the association between dependent and independent variables. The findings of the study provide insights into the key constraints faced by farmers and offer implications for strengthening the efficiency and impact of the Farmer FIRST Programme.

Keywords: Beneficiaries, constraints, crop based module, farmer first programme, and suggestions

1. Introduction

Agriculture remains the most widespread occupation and the principal source of livelihood for the majority of India's population. The country continues to be largely an agrarian economy, with approximately 69 percent of its population residing in rural areas (Anonymous, 2011) ^[1]. In this context, agricultural policies play a vital role in promoting inclusive and pro-poor economic growth by enhancing productivity, profitability, and sustainability. Indian farmers have long faced persistent challenges related to productivity, resource utilization, and environmental management. However, the availability of suitable and localized solutions has often been limited. To address these gaps, the Farmer FIRST Programme (FFP) has emerged as an innovative approach aimed at strengthening the linkages between farmers, researchers, and extension professionals. The programme facilitates participatory problem-solving by fostering collaboration among stakeholders, enabling the development, testing, and refinement of context-specific and acceptable technological solutions that can effectively address farmers' real-world challenges.

The Farmer FIRST Programme (FFP), launched by the Indian Council of Agricultural Research (ICAR), represents an innovative initiative designed to move beyond the conventional focus on production and productivity. Instead, it emphasizes the realities of smallholder agriculture, which is often complex, diverse, and risk-prone. The programme seeks to strengthen the farmer-scientist interface to ensure that agricultural research and innovations are more responsive to the actual needs and constraints of farmers. As the natural resource base that sustains agriculture faces increasing stress and degradation (ICAR, 2016), such participatory and inclusive approaches have become imperative. Under the FFP framework, linkages among farmers, researchers, and extension professionals are established to promote joint experimentation and problem-solving. Farmers are encouraged to identify and conduct experiments addressing their own challenges, thereby making them active participants in the research process rather than passive recipients of technology. During the course of production, farmers often generate innovative ideas and local solutions to improve agricultural practices

and natural resource management. Through collaboration, these ideas can be scientifically validated, refined, and scaled up. Hence, the Farmer FIRST Programme not only bridges the gap between scientific knowledge and field realities but also fosters co-creation of knowledge that directly benefits farming communities. In this context, the Farmer FIRST Programme (FFP) offers a unique platform for collaboration among researchers, extension professionals, and farmers to jointly develop context-specific and acceptable solutions through the evaluation of multiple alternatives. The approach envisions agriculture as a communal learning and experimentation process, extending beyond the individual farm or family to encompass entire villages and communities. Considering these perspectives, the present study aims to identify and analyze the problems encountered and suggestions provided by farmers under a crop-based module of the Farmer FIRST Programme implemented in the Balaghat district of Madhya Pradesh. The outcomes of this investigation are expected to provide insights into the flexibility, effectiveness, and practical relevance of the FFP in addressing local agricultural challenges. Moreover, the study seeks to evaluate the extent of farmers' participation and the difficulties experienced during implementation, which are crucial for understanding the programme operational dynamics. The findings are anticipated to be of significant value to policy-makers, implementing agencies, and funding organizations, as they can guide future strategies aimed at strengthening, scaling, and refining the Farmer FIRST Programme to ensure its greater impact and sustainability in promoting participatory agricultural development.

2. Materials and Methods

The present study was conducted in the Balaghat district of Madhya Pradesh during the period 2020–2021. Geographically, Balaghat district is situated in the southeastern part of Madhya Pradesh, extending from 21.19° to 22.24° North latitude and 79.39° to 81.30° East longitude, with an average elevation of 303 meters above mean sea level. The district is bounded by Mandla district to the north, Gondia district (Maharashtra) to the south, Seoni district to the west, and Rajnandgaon district (Chhattisgarh) to the east. Administratively, Balaghat comprises ten development blocks, among which the Lalbarra block was purposively selected for the present study due to its agricultural relevance under the Farmer FIRST Programme. The Lalbarra block consists of 107 villages, out of which a cluster of three villages—Chillod, Koppe, and Lendejhari—was purposively selected for detailed investigation under the crop-based module of the programme.

An ex-post facto research design was adopted for the present study. To assess the problems and suggestions perceived by farmers under the Farmer FIRST Programme (FFP), the Crop-Based Module was purposively selected from the five modules implemented, as it included the highest number of beneficiaries in the Lalbarra block. From each selected village, 35 percent of the total beneficiaries

were chosen using a proportionate random sampling method, ensuring representative coverage across all study locations. The primary data pertaining to the agricultural year 2020–2021 were collected directly from the FFP beneficiaries through personal interviews using a well-structured interview schedule. To ensure a more precise prioritization of the perceived constraints and suggestions, the Garrett Ranking Technique was employed. Respondents were asked to rank the identified problems and suggestions according to their level of importance. These ranks were subsequently converted into percent positions using the following formula:

$$\text{Percent Position} = 100 (R_{ij} - 0.5) / N_j$$

Where:

- R_{ij} = rank given for the i -th item by the j -th individual
- N_j = number of items ranked by the j -th individual

The percent position was then converted into Garrett scores using the Garrett Ranking Table. The average Garrett score for each item was calculated, and ranks were assigned accordingly.

3. Results

To supplement the quantitative findings, a few case studies were documented by the researcher during field observations conducted at the time of data collection. These case studies provided valuable qualitative insights into the ground realities and perceptions of the beneficiaries under the Crop-Based Module of the Farmer FIRST Programme (FFP). Some cases also reflected negative perceptions among the beneficiaries, enabling the researcher to better understand the grassroots-level challenges and constraints faced during the programme implementation. Table 1 presents the rank order of constraints in the crop-based module of the Farmer FIRST Programme as perceived by the beneficiaries. The data reveal that the major constraints reported were irregularity in the payment of labour wages (75.62), lack of co-operation among farmers (71.44), local political interference (65.18), and non-availability of seeds, fertilizers, and machinery at the proper time (61.32). These issues were identified as the most critical factors hindering the smooth execution of the module. On the other hand, factors such as lack of clear understanding of project objectives (58.49), non-availability of funds for emergency purchases (54.63), conflicts between project staff and beneficiaries (51.75), lack of trust in project officials (48.27), low awareness regarding the benefits of the module (44.39), and improper utilization of funds (40.68) were perceived as less severe constraints. These findings indicate that both administrative and social factors significantly influence the effectiveness of the Farmer FIRST Programme at the grassroots level. The results are in agreement with the observations of Samitha and Kumar (2017) ^[8], who also reported similar challenges in participatory agricultural development programme across different regions of India.

Table 1: Garrett Ranking for Constraints perceived by the beneficiaries.

S. No.	Constraints	Mean Garrett Score	Rank
1.	Irregularity in payment of labour/wages	75.62	I
2.	Lack of co-operation among farmers	71.44	II
3.	Local political interference	65.18	III
4.	Non-availability of seeds/fertilizers/machinery	61.32	IV
5.	Lack of understanding of project objectives	58.49	V
6.	Non-availability of funds for emergencies	54.63	VI
7.	Conflicts between project staff and people	51.75	VII
8.	Lack of trust in project officials	48.27	VIII
9.	Low awareness regarding benefits	44.39	IX
10.	Improper utilization of funds	40.68	X

Table 2: Garrett Ranking for Suggestions of the beneficiaries towards crop based module under Farmer FIRST Programme

S. No.	Suggestions	Mean Garrett Score	Rank
1.	Demonstration on farmers' fields	78.23	I
2.	Financial support on time	72.35	II
3.	Timely availability of quality inputs	70.21	III
4.	Government sale policies for produce	66.44	IV
5.	Year-round irrigation availability	63.12	V
6.	FFP info at block/district level	60.53	VI
7.	Transport & high yielding varieties	57.20	VII
8.	Regular training camps	49.68	VIII

Table 2 Reveals the important suggestions given by the beneficiaries, the higher number of beneficiaries suggested that demonstration should be conducted on farmers field by agriculture department which is 78.23 and the least number of beneficiaries suggested that training camps for providing technological knowledge should be organized time to time which is 49.68.

4. Conclusion

From the findings of the study, it can be concluded that the majority of farmers encountered significant challenges related to the irregularity in the payment of labour wages, lack of co-operation among farmers, and the non-availability of seeds, fertilizers, and machinery at the appropriate time. These issues were identified as the major constraints affecting the smooth and effective implementation of the Crop-Based Module under the Farmer FIRST Programme (FFP). The results of this investigation provide valuable insights into the current status, strengths, and limitations of the crop-based module in the study area. By highlighting the key weaknesses and operational bottlenecks faced by beneficiaries, the study offers important policy implications for improving the design, management, and efficiency of the Farmer FIRST Programme. Strengthening institutional coordination, ensuring timely input delivery, promoting farmer cooperation, and enhancing transparency in fund management could significantly improve the overall performance and impact of the FFP in fostering participatory, sustainable, and inclusive agricultural development.

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