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# Perception of Fish Farmers about the Schemes and Training Imparted by the Department of Fisheries in District Ganderbal

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**Abstract**

*The study titled "Perception of Fish Farmers about the Schemes and Training Imparted by the Department of Fisheries in District Ganderbal" aimed to evaluate the perspectives of fish farmers on the effectiveness of the training and schemes provided by the Department of Fisheries. Conducted in District Ganderbal, the research employed a descriptive and inferential survey method with purposive sampling. A sample of 99 fish farmers out of a target population of 133 was selected through proportionate random sampling. Data were gathered using an interview schedule and analyzed with statistical tools such as frequency, percentage, mean, standard deviation, standard error, and correlation analysis, utilizing PAST 4.0 and MS EXCEL. The study found that most respondents were young males with secondary education, belonging to medium-sized families with small land holdings, and operating functional carp farms under the Rashtriya Krishi Vikas Yojana (RKVY) scheme. These farmers exhibited medium levels of information-seeking behavior, mass media exposure, extension participation, and communication behavior.*

*Results indicated favorable perceptions towards pond management and schemes, neutral perceptions of training programs and disease prevention, and unfavorable perceptions towards Front Line Demonstrations (FLD), On-Farm Trials (OFT), seed quality, and feed management. Key challenges identified included the unavailability and poor quality of feed, high feed costs, poor seed quality, infrequent visits from Fisheries Department members, lack of field visits and educational tours, and fish mortality.*

*The major expectations of the farmers included insurance coverage for fish mortality, more schemes for equipment and bund construction/repair, provision of affordable and high-quality seed and feed, additional training programs on new technologies, timely visits by department members, improved communication with extension agents, and organized field visits and educational tours by the Fisheries Department.*

**Keywords:** Perception, expectations, schemes, training, management, fish mortality, program

## Introduction

Fish play a vital role in global nutrition, providing sustenance for over a billion people and bolstering livelihoods worldwide (Hussain et al., 2016). In Jammu and Kashmir, endowed with abundant aquatic resources spanning an area of approximately 222,236 square kilometres, fishing contributes significantly to the economy (Nanda et al., 2019). The state's fisheries sector, including rivers, lakes, ponds, and high-altitude pools, supports nutritional standards, job creation, food supply expansion, and foreign exchange earnings.

Historically rooted in sport fishing and conservation, the Department of Fisheries underwent substantial reorganization in 1978, establishing

district-level offices and expanding infrastructure such as carp and trout farms, hatcheries, and sales centres across all regions. State and Central government-sponsored schemes have further propelled fish culture in the private sector, providing employment opportunities, particularly to educated unemployed youth.

Achieving a landmark fish production of 21.34 lakh tonnes in fiscal year 2020–21, Jammu and Kashmir stands out as a Union Territory with significant local fish production potential, encompassing cold- and warm-water fisheries, reservoirs, lacustrine ecosystems, and sport fishing (J&K Fisheries Department).

Recent years have witnessed a surge in aquaculture popularity, supported by initiatives from the Regional Fish Farmers Development Agency (RFFDA) and extension organizations. These efforts include training sessions, field trips, and educational programs aimed at enhancing fish farming awareness among farmers.

Perception is crucial in assessing the effectiveness of training programs. Understanding how fish farmers perceive the schemes and training imparted by the Department of Fisheries is essential for evaluating their impact. Hence, this study focuses on exploring the "Perception of Fish Farmers about the Usefulness of Training and Schemes Offered by the Department of Fisheries in District Ganderbal."

*Hypotheses*

Fish farmers in District Ganderbal perceive that the training programs provided by the Department of Fisheries significantly enhance their expertise and knowledge in fish farming practices.

Fish farmers in District Ganderbal believe that the schemes implemented by the Department of Fisheries substantially improve their livelihoods by boosting productivity and increasing income from fish farming activities.

## Materials and Methods

The study titled "Perception of Fish Farmers about the Schemes and Training Imparted by the Department of Fisheries in District Ganderbal" was carried out in District Ganderbal during 2021-2022. This region, known for its hilly terrain and lush green forests, is home to a network of water bodies including the River Sindh, Wangath stream, Chattergul, Markul, Tulmulla spring, and high-altitude lakes such as Kishen Sar, Vishan Sar, Gangbal, Gad Sar, and Larkul.

The district's trout populations primarily serve the angling community, supported by established trout rearing units in Margund and Mammer, and a recreational pond in Sonamarg. Approximately 80% of the district's population is engaged in agriculture and allied sectors. The study utilized a descriptive and inferential research design with a survey strategy. Lists of farmers who had benefited from training and schemes were obtained from the Department of Fisheries and the Regional Fish Farmers Development Agency, Ganderbal. An interview schedule tailored to the study's objectives was used for conducting personal interviews with selected farmers.

Respondents were chosen using proportionate random sampling across Ganderbal's six blocks: Ganderbal, Kangan, Lar, Safapora, Gund, and Wakura. Out of 133 farmers who had availed various schemes and training programs, a sample of 99 was selected. These schemes included financial programs such as the PM's package, State Sector Plan (SS PLAN), Blue Revolution, Rashtriya Krishi Vikas Yojana (RKVY), and Pradhan Mantri Matasya Sampada Yojana (PMMSY).

The interview schedule was pre-tested on a separate group before the actual data collection, which took place from February 2021 to March 2021. Primary data were collected through personal interviews, while secondary data were sourced from the Department of Fisheries and the Regional Fish Farmers Development Agency, Ganderbal.

## Results and Discussion

A large majority (83.3%) of respondents believe that the training sessions are relevant to their needs and are practical, focusing on fieldwork Table 1). This indicates that the training programs are well-tailored to the actual conditions and requirements of fish farming. A smaller group (16.2%) of respondents disagrees, suggesting that there may be some gaps in addressing specific needs or practical aspects of fish farming for certain farmers. Most respondents (71.7%) are unsure about whether the trainers emphasize increasing fish yield and skill

Table 1: Distribution of respondents according to their responses towards training programme (n=99).

| S.No. | Statements | Responses | | | | | |
|---|---|---|---|---|---|---|---|
| | | Agree | | Undecided | | Disagree | |
| | | Frequency | % age | Frequency | % age | Frequency | %age |
| 1. | Trainings provided to fish farmers are need based and field work oriented | 83 | 83.8 | 0 | 0 | 16 | 16.2 |
| 2. | Trainer emphasizes more on increasing fish yield and skill improvement. | 0 | 0 | 71 | 71.7 | 28 | 28.3 |
| 3. | Trainings help in developing entrepreneurship | 0 | 0 | 4 | 4.0 | 95 | 96.0 |
| 4. | Trainings help to know new technologies | 0 | 0 | 83 | 83.8 | 16 | 16.2 |

improvement. This uncertainty could indicate a lack of clarity or communication in the training objectives or content. Trainers might not be effectively communicating the importance of yield improvement and skill enhancement, or these topics might not be prominently featured in the training materials. **Mi**nority (28.3%) disagrees, implying that they feel the training does not sufficiently focus on yield improvement and skill enhancement, which are critical for their productivity. Almost all (96.0%) respondents believe that the training programs do not contribute to developing entrepreneurship skills. Entrepreneurship development might not be included in the curriculum, or if it is, it might be superficial and not integrated into the practical aspects of fish farming. This points to a significant area for improvement, as fostering entrepreneurial skills can enhance fish farmers' ability to innovate and sustain their businesses. A small fraction (4.0%) is undecided, perhaps indicating a lack of exposure to the entrepreneurship components of the training or mixed experiences. A majority of respondents (83.8%) are uncertain about whether the training helps them learn about new technologies. This suggests that while new technologies might be discussed, there may be a gap in effectively communicating or demonstrating these technologies. The training might include theoretical information about new technologies but lack practical demonstrations or hands-on activities that help farmers understand and apply these technologies. Some respondents (16.2%) disagree, indicating that they do not find the training effective in introducing them to new technological advancements in fish farming. The technologies introduced might not be relevant to their specific context, or there could be challenges in accessing or implementing these technologies on their farms. The finding was in line with the finding of Ashrafuzzaman (2018).

A majority of respondents (61.6%) agree that FLD programs are effective in disseminating new technologies, indicating that these programs are fulfilling their primary objective of introducing innovative practices to farmers (Table 2). However, a significant minority of respondents (38.4%) disagree, suggesting that nearly 40% feel the FLD programs are not adequately oriented towards new technology dissemination. This discrepancy points to potential gaps in the effectiveness or perception of these programs. Most respondents (60.6%) believe that the sites selected for FLD demonstrations are appropriate, suggesting that the criteria for site selection are largely being met. Yet, similar to the first statement, a notable portion of respondents disagree, highlighting concerns about the suitability of the demonstration sites. This indicates that while many sites are deemed proper, there is room for improvement in site selection processes to ensure broader satisfaction. Less than half of the respondents (47.5%) agree that orientation training is provided, showing that there is some effort in training but it may not be comprehensive or consistent. A small percentage of respondents are unsure, indicating a lack of clarity or awareness about the training provided. A substantial number of respondents disagree, reflecting that many participants feel that adequate orientation training on technologies and methodologies is lacking.

Table 2: Distribution of respondents according to their responses towards front line demonstration (n=99)

| S.No. | Statements | Responses | | | | | |
|---|---|---|---|---|---|---|---|
| | | Agree | | Undecided | | Disagree | |
| | | Frequency | % age | Frequency | % age | Frequency | %age |
| 1. | Is FLD oriented towards new technology dissemination. | 61 | 61.6 | 0 | 0 | 38 | 38.4 |
| 2. | Is there proper selection of site for demonstration. | 60 | 60.6 | 0 | 0 | 39 | 39.4 |
| 3. | Do they (extension agents) organize an orientation training for all the participating individuals about all aspects of technologies and methodologies to be demonstrated. | 47 | 47.5 | 10 | 10.1 | 42 | 42.4 |
| 4. | Do they (extension agents) monitor on continuous and regular basis through visits to FLD plots, record observations and obtain the feedback from the fish farmers. | 48 | 48.5 | 9 | 9.1 | 42 | 42.4 |

This suggests a significant area for improvement in the preparatory stages of FLD programs. Slightly less than half of the respondents (48.5%) agree that continuous and regular monitoring is conducted by extension agents, indicating that there is some level of ongoing engagement. A small portion of respondents are undecided, possibly due to inconsistent experiences or lack of visibility of monitoring activities. A significant proportion of respondents disagree, suggesting that many farmers do not perceive regular and thorough monitoring, observation recording, or feedback collection by extension agents. This highlights a need for better communication and more consistent monitoring practices. The findings are similar to those of Mehriya (2020).

Around of respondents (41.4%) believe that extension workers modify training programs based on feedback from on-farm trials (Table 3). This suggests that some extension workers may be responsive to farmer feedback. The majority, however, disagree, indicating that many farmers do not see changes or adaptations in training programs based on their feedback. This could point to a communication gap or a lack of responsiveness in the training program structure. A very small number are undecided, indicating that there is little ambiguity in farmers' perceptions on this matter. Less than half of the respondents agree that extension workers identify location-specific problems, suggesting that some farmers feel their unique challenges are being recognized. A majority (53.5%) disagree, indicating a perception that extension workers may not be effectively addressing or recognizing the specific problems of different locations. A small percentage are undecided, showing slight uncertainty about this aspect. 43.4% of respondents agree that the objectives of training are clearly stated and experiments are properly laid out by extension agents, suggesting that some farmers feel informed and involved in the research process. 52.5% i.e., a slight majority disagree, indicating that many farmers feel the objectives and experimental setups are not communicated clearly, which could lead to confusion and lack of proper engagement in the training activities. A small portion are undecided, indicating some level of uncertainty or variability in experiences. 43.4% agree that extension workers conduct on-farm research to refine their studies, showing that some farmers see active research efforts on their farms. The majority disagree, suggesting that many farmers do not observe ongoing research activities or feel that their farms are not utilized for refining research. This could point to a gap in practical research application. A small percentage are undecided, reflecting some uncertainty in this area.

The survey results highlight a significant divide in farmers' perceptions of the effectiveness and responsiveness of extension workers. The majority of respondents do not see training programs being

Table 3: Distribution of respondents according to their responses towards on farm trials (n=99)

| S.No. | Statements | Responses | | | | | |
|---|---|---|---|---|---|---|---|
| | | Agree | | Undecided | | Disagree | |
| | | Frequency | % age | Frequency | % age | Frequency | %age |
| 1. | Do you believe that extension workers modify training programme on the basis of feedback received on-farm trials. | 41 | 41.4 | 2 | 2.0 | 56 | 56.6 |
| 2. | Do they find out location specific problem. | 42 | 42.4 | 4 | 4.0 | 53 | 53.5 |
| 3. | Does the extension agent state the objectives of the training clearly and lay out the experiments properly | 43 | 43.4 | 4 | 4.0 | 52 | 52.5 |
| 4. | Do they carry out research on the farms to refine the training. | 43 | 43.4 | 3 | 3.0 | 53 | 53.5 |

modified based on their feedback, which may indicate a lack of feedback mechanisms or poor communication regarding how feedback is used. Implementing a more transparent and structured feedback process, ensures that the farmers see the impact of their input on training programs. Many farmers feel their unique location-specific problems are not adequately addressed. This may be due to a one-size-fits-all approach in training and support. Incorporating local farmers into the developmental process , customizing training programmes and providing support to meet the unique needs of various regions could prove quite helpful. The clarity of research objectives and proper layout of experiments are perceived as inadequate by many farmers, which may stem from insufficient communication or involvement in the research process. Enhance communication efforts to clearly state research objectives and methodologies, possibly through detailed briefings or participatory workshops. Many farmers do not observe ongoing research activities on their farms, which may indicate a lack of visible research presence or communication about these efforts. Increase the visibility of on-farm research activities and ensure farmers are aware of and involved in these processes to enhance the practical application of research findings. By addressing these areas, extension services can better meet the needs of fish farmers, leading to more effective training programs, better problem identification, clearer communication of research, and more practical application of research activities.

From the table 4 it is clear that majority of the farmers (64.6%) had unfavourable perception about feed management. However, 35.4 percent of the farmers had favourable perception and 5.0 percent of the farmers had neutral perception towards Feed Management. Only a minority of respondents agree that the trainings help in reducing feed loss. This suggests that while some farmers see the benefits of training in managing feed, a larger proportion do not. The majority (64.6%) disagree, indicating that most farmers do not perceive the trainings as effective in addressing feed loss. This could point to gaps in the training content or its application in practical scenarios. No respondents were undecided, showing clear-cut opinions on this matter. A large majority agree that trainings provide valuable information on optimal feed usage for maximum fish growth. This indicates a positive perception of the training content in this specific area. A very small minority disagree, suggesting that while most farmers find the training useful, a few may not see its relevance or effectiveness. No respondents were undecided, showing strong consensus. Only a very small number **(1%)** agree that formulated feed is preferred over natural feed, indicating a strong preference among farmers for natural feed. An overwhelming majority disagree, reinforcing the preference for natural feed among the farmers surveyed. This could be due to familiarity, perceived benefits, or cost considerations. No respondents were undecided, highlighting a clear preference. All respondents agree that formulated feed is more expensive than natural feed, indicating unanimous recognition of the cost difference. No respondents disagree, showing no ambiguity about the cost issue. No respondents

Table 4: Distribution of respondents according to their responses towards feed management (n=99)

| S.No. | Statements | Responses | | | | | |
|---|---|---|---|---|---|---|---|
| | | Agree | | Undecided | | Disagree | |
| | | Frequency | % age | Frequency | % age | Frequency | %age |
| 1. | Trainings help in reducing feed loss. | 35 | 35.4 | 0 | 0 | 64 | 64.6 |
| 2. | Trainings provide information about the minimum usage of feed to attain maximum growth of fish. | 93 | 93.9 | 0 | 0 | 6 | 6.1 |
| 3. | Formulated feed is preferred over natural one | 1 | 1.0 | 0 | 0 | 98 | 99.0 |
| 4. | Formulated feed is costly compared to natural feed. | 99 | 100 | 0 | 0 | 0 | 0 |

were undecided, reflecting a clear consensus.

The survey results highlight distinct perceptions and preferences among fish farmers regarding training and feed practices. While a minority of farmers acknowledge that training helps in reducing feed loss, the majority do not see it as effective. The training content may not be adequately addressing practical strategies for feed loss reduction, or farmers might not be implementing the techniques correctly. To focus more on practical, actionable strategies for reducing feed loss, reviewing and enhancing the training programs can prove to be helpful. Also, incorporating hands-on demonstrations and follow-up support can ensure effective implementation. A large majority of farmers find the trainings useful in providing information on optimal feed usage, indicating the effectiveness of this aspect of the training. The training programs likely provide clear, relevant, and practical information on feed management. Continue and possibly expand this aspect of training, ensuring that the information remains up-to-date and accessible to all farmers. There is a strong preference for natural feed among farmers, with very few favouring formulated feeds. Farmers may have concerns about the cost, accessibility, or perceived benefits of formulated feed compared to natural feed. Cultural and traditional practices may also play a role in this preference. Balanced information should be provided on the benefits and costs of both natural and formulated feeds. Testimonials or case studies of farmers who have successfully integrated formulated feed into their practices should be considered for inclusion. The unanimous agreement that formulated feed is more costly underscores a significant barrier to its adoption. The high cost of formulated feed makes it less accessible to farmers, particularly those with limited financial resources. Explore options for subsidizing the cost of formulated feed or developing more cost-effective alternatives. Additionally, training on the long-term economic benefits of using formulated feed (e.g., higher growth rates, improved health) may help justify the initial investment. By addressing these areas, training programs and extension services can better meet the needs of fish farmers, leading to more effective feed management practices and overall improved productivity and well-being.

All respondents agree that training programs effectively provide information on proper site selection, indicating a high level of satisfaction with this aspect of the training (Table 5). Similarly, all respondents agree that the training programs provide valuable information on water sources for fish culture. No respondents disagree, further indicating the effectiveness of the training in this area. Almost all respondents agree that they gain knowledge about pre-stocking and post-stocking management through training programs. A very small percentage disagree, suggesting that there might be minor gaps or areas for improvement. A significant majority agree that training programs help them understand water quality parameters essential for fish survival. However, a notable minority disagree, indicating that this aspect of the training might need enhancement or more focused attention. The survey results highlight that training programs in fish farming are generally well-received, especially in areas related to site selection and water source information. However, there are areas, particularly water quality

Table 5: Distribution of respondents according to their responses towards pond management (n=99)

| S.No. | Statements | Responses | | | | | |
|---|---|---|---|---|---|---|---|
| | | Agree | | Undecided | | Disagree | |
| | | Frequency | % age | Frequency | % age | Frequency | %age |
| 1. | Trainings provide information regarding proper site selection for fish ponds / raceways. | 99 | 100 | 0 | 0 | 0 | 0 |
| 2. | Training programmes provide information related to source of water for fish culture | 99 | 100 | 0 | 0 | 0 | 0 |
| 3. | Knowledge regarding pre stocking and post stocking management is obtained | 98 | 99 | 0 | 0 | 1 | 1.0 |
| 4. | Water quality parameters necessary for fish survival are understood through training programmes | 71 | 71.7 | 0 | 0 | 28 | 28.3 |

management, where improvements could be made. Training programs are highly effective in providing information about proper site selection for fish ponds and identifying suitable water sources. Clear, practical guidelines and easily understandable training materials might contribute to the high satisfaction levels. Consistent and comprehensive training sessions likely reinforce these aspects. Continue with the current training methods and materials in these areas. Ensure that new farmers receive thorough training to maintain high standards. Almost all respondents gain useful knowledge in this area, but there is a tiny fraction that disagrees. The minor disagreement might be due to specific personal experiences or variability in training delivery. The training content and delivery methods should be reviewed to ensure consistency. Feedback should be collected from the minority who disagreed to identify and address any specific concerns. While a majority understand the necessary water quality parameters for fish survival through training programs, a significant minority do not. Water quality management can be complex and may require more detailed and hands-on training. The training might not be sufficiently in-depth for all participants. Additional resources, such as detailed manuals and real-life case studies, should be provided to help farmers better understand and manage water quality.

The survey results indicate that training programs are generally effective in providing essential knowledge for fish farming, particularly in site selection and water source identification. However, there is room for improvement in areas such as pre-stocking and post-stocking management and water quality parameters. By addressing these areas, training programs can become more comprehensive and beneficial for all fish farmers, ultimately leading to better farming practices and outcomes. The findings are similar to those of Ssekyanzi (2022).

A majority (60.60%) of respondents agree that training helps in preventing fish diseases, indicating the effectiveness of training programs to some extent (Table 6). A significant portion disagrees, suggesting that not all farmers find the trainings sufficiently comprehensive or effective. Only a small percentage agree, indicating dissatisfaction with the availability or effectiveness of treatment facilities provided by the department. The overwhelming majority (89.9%) disagree, highlighting a critical gap in support during disease outbreaks. A minimal percentage are undecided, showing that most respondents have a definitive stance on this issue. **35.4% i.e.,** only about a third agree, suggesting limited success in preventing fish mortality through current measures. The majority (63.6%) disagree, indicating that fish mortality due to disease remains a significant problem. A majority agree, showing that training programs are effective in raising awareness about fish diseases. A substantial (37.4%) minority disagree, indicating that there is room for improvement in education and awareness efforts. The survey results highlight several issues regarding the effectiveness of training programs and the support provided by the Fisheries

Table 6: Distribution of respondents according to their responses towards disease prevention (n=99)

| S.No. | Statements | Responses | | | | | |
|---|---|---|---|---|---|---|---|
| | | Agree | | Undecided | | Disagree | |
| | | Frequency | % age | Frequency | % age | Frequency | %age |
| 1. | Trainings help in preventing a variety of fish diseases | 60 | 60.6 | 0 | 0 | 39 | 39.4 |
| 2. | In case of disease outbreak department provides treatment facilities. | 9 | 9.1 | 1 | 1.0 | 89 | 89.9 |
| 3. | Fish mortality due to disease is prevented. | 35 | 35.4 | 1 | 1.0 | 63 | 63.6 |
| 4. | Farmers become aware about the different types of fish diseases | 62 | 62.6 | 0 | 0 | 37 | 37.4 |

Department in managing fish diseases. While a majority find the training programs helpful in preventing fish diseases, a significant minority do not. Variability in training quality, insufficient coverage of practical aspects, or lack of follow-up support may contribute to differing perceptions. The training content should be improved to include more practical and hands-on disease prevention techniques. Follow-up sessions should be implemented to address ongoing concerns and provide additional support. An overwhelming majority of respondents disagree that the Fisheries Department provides adequate treatment facilities during disease outbreaks. Limited resources, logistical challenges, or delays in response could be contributing factors. The availability and accessibility of treatment facilities and services should be enhanced. Rapid response teams should be established, and processes streamlined to ensure timely support during outbreaks. A significant majority of respondents do not believe that fish mortality due to disease is adequately prevented. Ineffective disease management practices, lack of timely interventions, or insufficient training on advanced prevention techniques may be the causes. Implement more robust disease management strategies and provide advanced training on preventing fish mortality. Regularly update farmers on new and effective practices. A majority agree that they become aware of different types of fish diseases through training programs, but a notable minority do not. Incomplete or inconsistent training content, lack of practical examples, or insufficient emphasis on lesser-known diseases might be the reasons. The training curriculum should be expanded to cover a broader range of fish diseases, including emerging threats. Real-life case studies and visual aids should be used to enhance understanding. The survey results indicate that while training programs are somewhat effective in raising awareness and preventing fish diseases, there are significant gaps in the provision of treatment facilities and the prevention of fish mortality. To address these issues, it is essential to improve the quality and comprehensiveness of training programs, enhance support during disease outbreaks, and implement more effective disease management strategies. The finding was in line with the finding of Adah (2022).

All respondents agree that seeds provided by the Fisheries Department are costlier (Table 7). This unanimous agreement indicates a significant concern among fish farmers regarding the cost of seeds. No respondents disagree or are undecided, highlighting a clear consensus on this issue. Only a small proportion of respondents agree that training programmes provide information on where to obtain quality seeds. This suggests that the majority of farmers do not find the training informative in this regard. No respondents were undecided, showing definitive opinions on the matter. All respondents agree that quality seeds from the Fisheries Department have a slow growth rate. This unanimous feedback suggests a widespread issue with the performance of the seeds provided. No respondents disagree or are undecided, highlighting a shared experience among farmers. A significant majority (74.7%) agree that trainings on quality fish seeds are beneficial. This positive perception indicates that the training programmes are valuable for many farmers. **25.3% of** notable minority

Table 7: Distribution of respondents according to their responses towards quality fish seed (n=99)

| S.No. | Statements | Responses | | | | | |
|---|---|---|---|---|---|---|---|
| | | Agree | | Undecided | | Disagree | |
| | | Frequency | % age | Frequency | % age | Frequency | %age |
| 1. | Seeds provided by Fisheries Department are costlier | 99 | 100 | 0 | 0 | 0 | 0 |
| 2. | Training programmes provide information regarding institutes from where quality seeds can be obtained | 27 | 27.3 | 0 | 0 | 72 | 72.7 |
| 3. | Quality seeds provided by Fisheries department have slow growth rate. | 99 | 100 | 0 | 0 | 0 | 0 |
| 4. | Trainings regarding quality fish seed are beneficial | 74 | 74.7 | 0 | 0 | 25 | 25.3 |

disagree, suggesting that while many find the trainings helpful, there are still areas for improvement. No respondents were undecided, showing clear-cut opinions on the effectiveness of the training. The survey results highlight several key issues and perceptions among fish farmers regarding seed quality and the effectiveness of training programmes. The higher cost of seeds may be due to the quality assurance processes, certification, and distribution logistics involved. However, this cost may not be justifiable for farmers if the perceived benefits do not outweigh the expenses. The Fisheries Department could explore subsidies or cost-sharing mechanisms to make seeds more affordable. They should also communicate the reasons behind the higher costs to ensure transparency. A majority of respondents do not find the training programmes effective in providing information on where to obtain quality seeds. Training content may not be sufficiently comprehensive or targeted. There could also be a lack of focus on practical sources and partnerships with quality seed providers. Training modules should be enhanced to include detailed information on reliable seed sources, possibly through collaborations with accredited seed institutions. Real-life case studies and examples can also be incorporated to make the information more practical and relatable. There is unanimous agreement that the quality seeds provided by the Fisheries Department have a slow growth rate. This could be due to genetic factors, suboptimal storage conditions, or a mismatch between the seed varieties and local environmental conditions. Conducting a thorough review of the seed quality and growth performance may help tackle this issue. The Fisheries Department should consider feedback from farmers and possibly collaborate with research institutions to improve the seed varieties. While a majority of respondents find the trainings beneficial, a significant minority do not. Variability in training delivery, lack of follow-up support, or differences in the needs and expectations of the farmers might contribute to this mixed perception. Follow-up support and feedback mechanisms should be implemented to continuously improve training effectiveness. The findings are in conformity with the findings of Argade (2023).

## Recommendations

To create a positive perception among fish farmers towards the schemes and programs offered by the Fisheries Department, it is essential to improve the quality and relevance of training and support services.

Recommendation Enhance Training Programs:

*Practical, Hands-On Sessions:*

Incorporate more practical sessions focused on increasing fish yield, skill improvement, and integrating new technologies to ensure farmers can apply what they learn.

*Comprehensive Content:*

Ensure the training programs provide detailed information on where to obtain quality seeds and offer practical demonstrations on reducing feed loss.

*Improve Support and Monitoring:*

*FLD Programs:*

Enhance site selection processes and provide comprehensive orientation training, coupled with consistent and visible monitoring by extension agents to ensure broader farmer satisfaction and engagement.

*Rapid Response Teams:*

Establish rapid response teams and streamline processes to ensure timely support during disease outbreaks, improving overall disease management.

*Follow-Up and Feedback:*

Implement follow-up support and robust feedback mechanisms to continuously improve training effectiveness and address farmers' specific concerns.

*Address Cost and Quality Issues:*

*Subsidies and Cost-Sharing:*

Explore subsidies or cost-sharing mechanisms for seeds and formulated feed to make them more affordable for farmers.

*Seed Quality Improvement:*

Collaborate with research institutions to improve the seed varieties based on farmer feedback and ensure they are well-suited to local conditions.

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