NEW ERA AGRICULTURE MAGAZINE

Capacity Building of Fish Farmers through Extension Activities

Dr. Sajina[1] Raval Ajay Dasharathbhai[2]

Introduction:

Fisheries play a vital role in ensuring food and nutritional security, employment generation, and income enhancement, especially in rural and coastal areas. In India, fish farming has emerged as one of the fastest-growing sectors of agriculture. However, the success of fisheries development largely depends on the knowledge, skills, attitude, and decision-making ability of fish farmers. Most fish farmers, particularly small and marginal ones, face constraints such as lack of technical knowledge, limited access to information, poor management practices, and weak market linkages.

In this context, **capacity building through fisheries extension activities** becomes a crucial instrument for empowering fish farmers. Extension activities help bridge the gap between research institutions and the farming community by transferring improved technologies, building skills, and enhancing farmers' confidence to adopt scientific practices. Capacity building not only improves productivity and profitability but also ensures sustainability of fisheries resources.

Meaning and Importance of Capacity Building in Fisheries

Capacity building refers to the process of developing and strengthening the abilities, skills, knowledge, and resources of individuals and institutions to perform their functions effectively and sustainably. In fisheries, capacity building aims to enable fish farmers to:

- Understand scientific fish farming practices
- Improve farm management and decision-making
- Adopt new technologies and innovations
- Enhance income and livelihood security
- Respond effectively to climate change and market challenges

Fish farmers who are well trained and informed are more likely to adopt improved practices such as quality seed selection, balanced feeding, disease management, water quality maintenance, and post-harvest handling. Thus, capacity building is the

Dr. Sajina[1] Raval Ajay Dasharathbhai[2]
[1]Former Ph.D. Scholar-West Bengal University of Animal & Fishery Sciences, Kolkata
2PhD scholar - Central institute of fisheries education, off yaari road, Panch marg, Versova, Mumbai, 400061

backbone of fisheries extension and rural development.

Role of Fisheries Extension in Capacity Building

Fisheries extension acts as a **link between research, policy, and fish farmers**. Extension personnel play the role of educators, facilitators, motivators, and advisors. The major roles of fisheries extension in capacity building include:

- Dissemination of proven technologies developed by research institutions
- Organizing need-based training and demonstrations
- Motivating fish farmers to adopt scientific practices
- Strengthening farmer organizations and self-help groups
- Facilitating access to credit, insurance, and government schemes

Through systematic extension efforts, fish farmers become capable of solving their own problems and managing their enterprises efficiently.

Major Extension Activities for Capacity Building of Fish Farmers

1. Training Programs

Training is one of the most effective extension tools for capacity building. Training programs are organized at village, block, district, and institutional levels to enhance farmers' technical and managerial skills.

Common training areas include:

- Scientific fish farming practices
- Pond preparation and water quality management
- Seed selection and stocking density
- Feed management and feeding techniques
- Fish health management and disease control
- Integrated fish farming systems

Well-designed training programs help fish farmers gain practical knowledge and confidence, enabling them to apply learned skills on their farms.

2. Method Demonstrations and Result Demonstrations

Demonstrations are powerful extension methods that promote learning by doing.

- **Method demonstrations** show *how to do* a particular practice, such as netting, liming of ponds, or feed preparation.
- **Result demonstrations** show *what happens* when a recommended practice is adopted, such as increased fish yield or reduced mortality.

Demonstrations conducted in farmers' fields increase credibility and encourage neighboring farmers to adopt improved practices.

3. Exposure Visits and Study Tours

Exposure visits provide fish farmers with opportunities to visit successful fish

farms, research stations, hatcheries, and training centers. These visits help farmers:

- Learn from progressive fish farmers
- Observe successful technologies in real conditions
- Interact with experts and fellow farmers
- Gain motivation and confidence

Such visits broaden the outlook of fish farmers and inspire them to adopt innovative practices.

4. Farmer-to-Farmer Extension

Experienced and progressive fish farmers act as local resource persons. Sharing of experiences among farmers helps in faster diffusion of technology. Farmer-to-farmer extension builds trust and promotes community learning, which is highly effective in rural settings.

5. Use of Information and Communication Technologies (ICTs)

Modern fisheries extension increasingly relies on ICT tools for capacity building. These include:

- Mobile advisory services
- WhatsApp groups for fish farmers
- Video-based learning modules
- Online training and webinars
- Mobile applications related to fisheries

ICTs ensure timely dissemination of information on weather, disease outbreaks, market prices, and government schemes, making extension services more efficient and accessible.

6. Formation and Strengthening of Fish Farmer Organizations

Collective action enhances the capacity of individual farmers. Fisheries extension plays a key role in promoting:

- Fish Farmer Producer Organizations (FFPOs)
- Self-Help Groups (SHGs)
- Cooperative societies

These organizations help farmers in input procurement, marketing, value addition, credit linkage, and policy advocacy. Organized farmers are better equipped to manage risks and access institutional support.

7. Extension Support for Government Schemes

Extension activities play a significant role in creating awareness and facilitating adoption of government schemes such as the **Pradhan Mantri Matsya Sampada Yojana (PMMSY)**. Extension personnel guide farmers in:

- Understanding scheme benefits
- Preparing project proposals
- Accessing subsidies and financial assistance
- Implementing approved projects

This support strengthens farmers' financial and entrepreneurial capacity.

Impact of Capacity Building through Extension Activities

Effective capacity building through fisheries extension leads to multiple positive outcomes:

- Increased adoption of scientific fish farming practices
- Improvement in fish productivity and quality
- Reduction in disease incidence and production risks
- Enhanced income and livelihood security
- Empowerment of women and rural youth
- Sustainable use of fisheries resources

Well-trained fish farmers become more resilient, innovative, and market-oriented.

Challenges in Capacity Building of Fish Farmers

Despite significant progress, several challenges remain:

- Limited number of trained extension personnel
- Inadequate infrastructure and financial resources
- Low literacy levels among fish farmers
- Poor coordination among stakeholders
- Climate change and environmental uncertainties

Addressing these challenges requires policy support, institutional strengthening, and participatory extension approaches.

Way Forward

To strengthen capacity building of fish farmers, the following strategies are needed:

- Need-based and location-specific training programs
- Greater use of digital and mobile-based extension tools
- Strengthening public–private partnerships
- Encouraging youth and women participation
- Continuous skill upgradation of extension personnel

A holistic and inclusive extension approach will ensure sustainable fisheries development.

Conclusion

Capacity building of fish farmers through extension activities is essential for the growth and sustainability of the fisheries sector. Extension services empower fish farmers with knowledge, skills, and confidence to adopt improved practices and manage their enterprises efficiently. By strengthening human and social capital, fisheries extension contributes significantly to livelihood security, rural development, and the overall blue economy. Investing in effective extension systems is therefore a key step toward

achieving sustainable and inclusive fisheries development.

References

1. **FAO.** (2018). *Capacity Development in Fisheries and Aquaculture.* Food and Agriculture Organization of the United Nations, Rome.
2. **FAO.** (2020). *The State of World Fisheries and Aquaculture.* FAO, Rome.
3. **ICAR.** (2017). *Fisheries Extension in India: Status, Challenges and Strategies.* Indian Council of Agricultural Research, New Delhi.
4. **ICAR-CIFE.** (2019). *Extension Approaches for Sustainable Fisheries Development.* ICAR-Central Institute of Fisheries Education, Mumbai.
5. **Ministry of Fisheries, Animal Husbandry and Dairying.** (2021). *Pradhan Mantri Matsya Sampada Yojana (PMMSY) – Operational Guidelines.* Government of India, New Delhi.
6. **Swanson, B. E., Bentz, R. P., & Sofranko, A. J.** (1997). *Improving Agricultural Extension: A Reference Manual.* FAO, Rome.
7. **Rogers, E. M.** (2003). *Diffusion of Innovations* (5th Edition). Free Press, New York.
8. **Sathiadhas, R., & Najmudeen, T. M.** (2012). *Socio-economic Dimensions of Fisheries Extension.* Journal of Fisheries Economics and Development, 13(2), 1–10.