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A case story/short communication: Chapala's journey from homemaker to entrepreneur through fish farming

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Abstract
Small-scale aquaculture plays a significant role in improving rural livelihoods and promoting women's economic empowerment. This short communication presents a case study of Chapala Mahato, a rural woman from Purulia district, West Bengal, who adopted scientific fish farming practices through training and technical handholding. By shifting from traditional carp culture to improved spawn rearing and grow-out practices in a small pond (16 decimals), she achieved substantial income enhancement within a short period. With a modest investment of Rs. 8,500, she generated a net return of Rs. 39,012 and a benefit–cost ratio of 5.59. The case highlights the potential of low-input, women-led pisciculture enterprises for sustainable livelihood development.

Keywords: Rural women empowerment, fish farming, livelihood diversification

Introduction
Small-scale pisciculture is increasingly recognised as a viable pathway for enhancing rural livelihoods, food security and income diversification, particularly among small and marginal farmers [3]. In India, participation of women in pisciculture remains limited despite its shown economic potential. Technical training, access to technical support and adoption of scientific practices can enable women to transform traditional fish farming into profitable micro-enterprises. The present case story documents the experience of a rural woman who successfully adopted improved fish farming practices, demonstrating the livelihood and significant outcomes through small-scale fish farming interventions [1, 2, 4, 5].

Case Description
Chapala Mahato, an OBC woman from Chirugora village of Jhalda II block, Purulia district of West Bengal, is primarily engaged in agriculture. Before intervention, her household practiced traditional carp farming with annual stocking and one-time harvesting, resulting in limited income. Following exposure to training and continuous handholding support, she renovated a 16 decimal small homestead pond and initiated nursery rearing after grow-out rearing of fish through scientific process.

She stocked 14 bowls of Indian Major Carp (Catla, Rohu, Mrigal) spawn in her small pond and adopted improved practices including pond cleaning, liming, net fencing, organic fertilization, application of organic juice and regular homemade feeding. The intervention focused on spawn to fingerling rearing followed by partial grow-out culture.

Results
After 40 days of rearing, Chapala have harvested gradually and sold a total of 125 kg of fingerlings (average size nearly 5 inches) in her village and nearby area. In addition, she harvested 68 kg of table-size fish (100- 150 g). The total operational cost was Rs. 8,500, while gross returns amounted to Rs. 47,512, resulting in a net income of Rs. 39,012 and a benefit–cost ratio of 5.59. The economic details of the culture operation are presented in Table 1 and Picture 1.

The increased income enabled her to start a small grocery shop and further stocked 200 scampi in this pond for family consumption and livelihood diversification.

Table 1: Culture Economics

Area: 16 decimals					
Sl. No	**Items**	**Unit**	**Quantity**	**Rate (Rs.)**	**Amount (Rs.)**
1	Culture cost				
1.1	Bowl of spawn (for two cycles)- Indian Major Carps	nos.	14	200	2800
1.2	Mustard oil cake	kg	60	27	1620
1.3	Lime	kg	60	12	720
1.4	Net hiring charge	times	10	50	500
1.5	Feed supplement (flour, beson, mustard oil, eggs etc., mixture)	kg	12	20	240
1.6	Test kit	nos.	2	360	720
1.7	Organic juice's materials	kg	50	28	1400
1.8	Potassium permanganate	gm	1	500	500
	Total OC (Rs.)				8500
2	Economic return		kg	Rs. /kg	

2.1	Sale of fingerlings (avg. 5 inches size)	kg	125	280	35000
2.2	Sale of table fish as desi fish (100-150 g size)	kg	68	184	12512
3	Gross economic return	Rs.			47512
4	Net return	Rs.			39012
5	Benefit cost ratio	ratio			5.59

Fig 1

Discussion

The study demonstrates that adoption of scientific fish farming practices in small water bodies can achieve significant economic returns within a short period. The study stated that women's engagement in small-scale aquaculture contributes to income generation, confidence building and local entrepreneurship [3]. The high benefit–cost ratio observed in this case underscores the suitability of spawn rearing and low-input pisciculture models for marginal households. Chapala's role as a 'Matsya Sakhi' further indicates the multiplier effect of women-led aquaculture in community awareness and experiential learning.

Conclusion

This case study illustrates that scientific small-scale fish farming can effectively transform traditional practices into profitable women-led enterprises. With minimal investment and appropriate technical support, rural women can achieve significant income enhancement and livelihood security. Scaling such models through training and little support contributes meaningfully to inclusive and sustainable rural pisciculture development.

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