

Nutrition-Sensitive Carp-Mola Polyculture for Improved Livelihoods and Wellbeing: Lessons from India

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INTRODUCTION

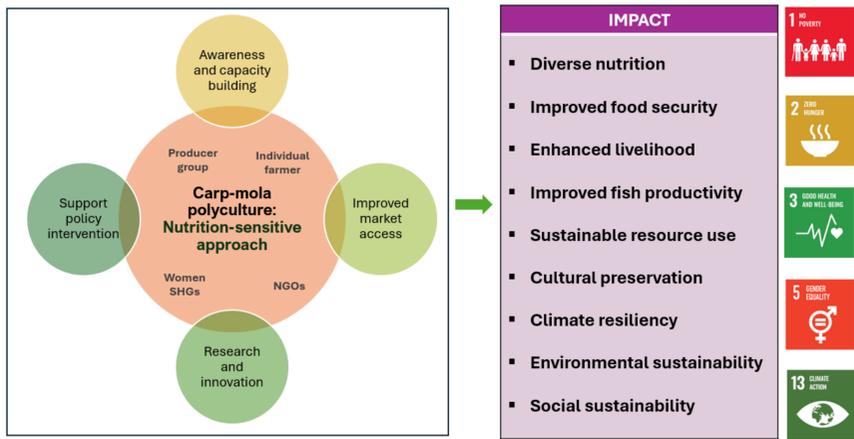


Figure 1. Carp-mola polyculture as a nutrition-sensitive approach linked to the Sustainable Development Goals.

- The carp-mola polyculture system integrates the nutrient-rich indigenous small fish mola (*Amblypharyngodon mola*) with conventional carp farming, presenting a comprehensive approach to enhancing food security, increasing production, diversifying income generation, promoting sustainable aquaculture, and supporting livelihoods [1].
- Integrating mola into carp polyculture systems has resulted in substantial mola yields in grow-out ponds without necessitating additional inputs or management, and without compromising carp yields.
- Incorporating mola into carp polyculture systems can boost the consumption of micronutrient-rich mola among women and children.
- This approach has demonstrated cost-effectiveness in addressing the issue of micronutrient malnutrition.

MATERIALS & METHODS

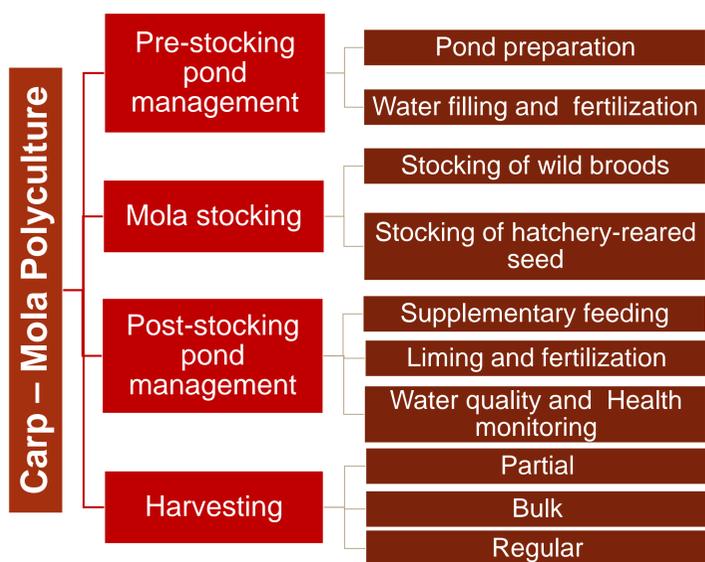


Figure 2. Improved pond management practices of carp-mola polyculture .



Figure 3: Mola (*Amblypharyngodon mola*)



Figure 4: 4 weeks old mola fry for stocking



Figure 5: Member of a WSHG is applying supplementary feed in carp-mola polyculture ponds in Odisha.



Figure 6: Carp-mola polyculture pond connected to the rice field in Assam

RESULTS

- Carp-mola polyculture boosts fish production and nutrition but faces challenges such as competition for resources and varying mola productivity [2-4].
- However, the average total production in carp-mola polyculture systems is 1.7-10.9 tons per hectare.
- Mola production can reach up to 155 kg per hectare in carp-mola polyculture systems.
- Various reports from carp-mola polyculture systems in Asia have demonstrated diverse levels of mola productivity based on stocking densities. In small-scale settings, an average mola production of 150-300 kg/ha can typically be attained [5].
- Carp-mola polyculture boosts fish production by 0.7-3.7 tons/hectare annually, depending on carp stocking density (2500-16000/ha) [5].
- In Bangladesh, integrating mola with farmed carp in ponds significantly increases overall productivity to 3.6 tons/hectare/year, improving income and family nutrition [6].
- Financial support and training provided to Women Self-Help Groups (WSHGs) have resulted in increased incomes.

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CASE STUDIES

The Assam Agribusiness and Rural Transformation Project (APART) and the government of Odisha's policy interventions through WSHGs have successfully implemented a new aquaculture system, enhancing livelihoods and nutrition. Through innovative techniques and collaborations, they've increased fish production and food security, demonstrating the economic and nutritional benefits of this sustainable aquaculture system.

CONCLUSION

- Carp-mola polyculture is a promising solution for small-scale aquaculture, improving food security and livelihoods while diversifying production [7].
- To maximize benefits, support farmers through training, capacity building, and access to resources like finance and markets.
- Continued research, monitoring, and evaluation are essential to optimize the system and measure its impact.
- By integrating with agroecology and renewable energy, carp-mola polyculture can become a sustainable and resilient model for rural development.

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