

FARMING FUTURES: CLIMATE-RESILIENT RECP STRENGTHENS PISCICULTURE



THE FUTURE OF PISCICULTURE: CLEAN, EFFICIENT, RESILIENT

Bangladesh’s fisheries sector plays a critical role in food security, nutrition, and rural livelihoods. According to the Department of Fisheries (DoF), inland culture fisheries contribute 59.34% total national fish production, amounting to 28.78 lakh metric tons in 2024. Millions of small and micro fish farmers depend on pond-based aquaculture for income and employment.

Despite this growth, pisciculture enterprises continue to face high input costs, inefficient feed use, excessive water exchange, and unmanaged sludge, resulting in reduced profitability and environmental stress. The sustainable pathway forward lies in adopting Resource-Efficient and Cleaner Production (RECP) practices—optimizing material, water, and energy use while minimizing waste and pollution.

Through targeted RECP interventions under the SMART Project, pisciculture enterprises are becoming more profitable, environmentally responsible, and resilient to climate change, securing livelihoods while protecting natural resources.




WATER USE EFFICIENCY TECHNIQUES

Efficient water management maintains adequate dissolved oxygen while reducing freshwater use, which is particularly critical for intensive aquaculture systems and water-scarce regions. Through the SMART Project, PKSF and its Partner Organizations promote improved water management practices—such as aerator use and regular pond maintenance—to sustain water quality, reduce exchange requirements, and improve fish survival and productivity.

AERATOR USE



BENEFITS




-  Improves oxygen supply
-  Enhances fish growth and survival
-  Reduces need for frequent water exchange

COST: BDT 35,000–50,000 approx.
per unit (one acre)

PROBIOTIC USE IN FISH PONDS



BENEFITS

-  Improves water quality
-  Enhances growth & feed efficiency
-  Reduces disease risk

COST: BDT 7,000–8,000 approx.
per kg

OPTIMIZED FEED MANAGEMENT

Efficient feed management is a key RECP intervention in aquaculture. Improper feeding technique, overfeeding causes feed wastage (5–10%), poor water quality, and higher costs. Through the SMART Project, PKSF supports fish farmers with technical guidance on improved feeding practices to enhance FCR, reduce costs, and minimize environmental impact.

IMPLEMENTATION

- Automatic feeder, feeding trays or rings to reduce the loss of applied food and monitor consumption
- Use of floating feed
- Feeding 2-3 times daily based on fish behavior
- Application of fermented feed

BENEFITS

- Offers better feed intake facility
- Reduces feed waste
- Lowers production costs
- Improves water quality



In addition to automatic feeders, feeding trays are now being used to distribute fish feed. Using feeding trays costs approximately BDT 2,000–3,000 per acre. On the other hand, the price for an automatic feeder is BDT 8,000–12,000 per unit.

POWERING PONDS: THE EFFICIENT, SMART WAY

Electricity costs from pumps and aeration systems significantly affect fish farmers' margins. Through the SMART Project, PKSF supports the adoption of energy-efficient pumps and aeration systems, alongside the use of solar panels to power water pumping and aeration under RECP, enabling fish farmers to reduce electricity consumption, lower operating costs, and improve enterprise profitability.



EFFICIENT PUMP, MOTOR & SOLAR POWER INTEGRATION

BENEFIT

- ⚡ Saves electricity
- 💰 Reduces monthly energy bills
- ⚡ Ensures reliable power for pumping and aeration
- 🌿 Lowers carbon emissions

COST: BDT 1,80,000–2,00,000 approx.
for 2 kW solar and 1.5 HP pump

TURNING WASTE INTO RESOURCES



Dead fish and used feed bag when unmanaged, degrade water quality and surrounding ecosystems. Through the SMART Project, PKSF promotes RECP-based circular economy solutions, such as composting dead fish and reusing leftover feed bags. These solutions convert aquaculture waste into valuable resources while reducing pollution and environmental risks.



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Project Management Unit (PMU)
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Address

PKSF Bhaban-1, Plot: E-4/B
Agargaon Administrative Area
Sher-e-Bangla Nagar, Dhaka-1207