

FAO Honours Sundarbans' Sustainable Aquaculture Model

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Sustainable Aquaculture Latest News

- The Sundarbans' Sustainable Aquaculture in Mangrove Ecosystems (SAIME) model has received Global Technical Recognition from the UN's Food and Agriculture Organisation.

The Sundarbans: A Fragile Ecosystem of Global Importance

- The **Sundarbans**, spanning India and Bangladesh, is the world's largest mangrove delta and a UNESCO World Heritage Site.
- The Indian portion, located primarily in **West Bengal**, covers nearly **9,630 square kilometres** and supports millions of people who depend on fishing, aquaculture, honey collection, and agriculture for their livelihoods.
- However, this region is increasingly threatened by **climate change, rising sea levels, soil salinity, and land-use change**.

- Frequent cyclones like *Amphan* and *Yaas*, coupled with unregulated aquaculture and deforestation, have severely impacted both biodiversity and human livelihoods.
- In this context, the **integration of mangrove conservation with sustainable economic activities** has emerged as a key model for resilience and adaptation.

Sustainable Aquaculture in Mangrove Ecosystems: A Climate-Resilient Model

- The Sustainable Aquaculture in Mangrove Ecosystems (SAIME) initiative, developed by the **Nature Environment and Wildlife Society (NEWS)**, represents a pioneering approach to balancing livelihood needs with ecological conservation.
- Implemented in the **Sundarbans region of North and South 24 Parganas districts**, the project has demonstrated that **sustainable shrimp farming can coexist with mangrove restoration**.
- Under this model, aquaculture ponds maintain **5%-30% mangrove coverage**, ensuring that biodiversity, carbon sequestration, and coastal protection are integrated into shrimp farming practices.
- The mangrove litter also serves as natural fodder, replacing expensive chemical feed and thus **reducing production costs significantly**.
- After years of implementation across **29.84 hectares by 42 fish farmers**, the **average net profit per farmer increased by over 100%**, highlighting the model's financial viability.

FAO's Global Recognition of the Sundarbans Model

- On **October 15, 2025**, during its **80th Anniversary and World Food Forum** held in Rome, the **Food and Agriculture Organisation** of the United Nations conferred **Global Technical Recognition** on the SAIME model.
- The recognition highlights how a community-based, nature-integrated model can contribute to **climate resilience, sustainable food systems, and biodiversity conservation**.

Balancing Livelihoods with Mangrove Conservation

- The Sundarbans have seen rapid land-use transformation over recent decades, with **unregulated shrimp monoculture** leading to widespread mangrove destruction.
- The SAIME model was conceptualised as a **counter-narrative to exploitative aquaculture practices**, promoting an **ecosystem-based and community-driven** framework.
- The project involves **community participation** at every stage, from pond management to mangrove plantation, ensuring that conservation efforts are **locally owned and socially inclusive**.
- Farmers are trained in **Good Aquaculture Practices (GAPs)**, including maintaining water quality, using organic inputs, and avoiding antibiotics or synthetic feed.
- This integrated approach has multiple benefits:
 - **Environmental:** Mangroves act as natural buffers against cyclones and tidal surges, reducing coastal erosion and supporting marine biodiversity.
 - **Economic:** Reduced input costs and improved yields have doubled farmer income.

- **Social:** Community participation fosters environmental stewardship and local empowerment.
- **Climate:** Enhanced mangrove coverage aids in **carbon sequestration**, supporting India's broader climate action commitments under the **Paris Agreement**.

Broader Significance for India's Blue Economy

- India's coastal regions are highly vulnerable to climate risks, and unsustainable aquaculture has often undermined long-term ecological balance.
- The SAIME model aligns closely with the Government of India's **Blue Economy Policy**, which seeks to integrate **marine resource sustainability with economic development**.
- It also resonates with the **Sustainable Development Goals (SDGs)**, particularly:
 - **SDG 1 (No Poverty)** – through livelihood diversification;
 - **SDG 13 (Climate Action)** – via carbon sequestration and coastal resilience;
 - **SDG 14 (Life Below Water)** – promoting sustainable use of marine resources; and
 - **SDG 15 (Life on Land)** – through mangrove restoration and habitat protection.
- Experts suggest that similar models could be replicated in **Andhra Pradesh, Odisha, and Kerala**, where shrimp farming is economically significant but ecologically challenging.

Way Forward

- The FAO's recognition of the Sundarbans aquaculture model underscores the need to scale up **community-based, climate-resilient aquaculture systems** across India's coastal belts. Policymakers can leverage this model to:
 - Integrate mangrove conservation into all aquaculture policies.
 - Incentivise farmers adopting sustainable practices through carbon credit mechanisms.
 - Promote training and capacity-building among coastal communities.
- Such initiatives can help India transition toward a **low-carbon, biodiversity-friendly, and inclusive blue economy**, aligning economic growth with environmental stewardship.

Source: **TH**

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