



Transform Farm Ponds into ECO FARM PONDS

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In tribal and rainfed areas, numerous seasonal water bodies have been created through watershed programs and NREGS initiatives. However, these water bodies often suffer from neglect, lacking effective management and utilization. Farm ponds in these regions typically collect rainwater, divert stream flows, or are replenished by seasonal and perennial springs, yet their potential remains largely untapped.

ASSAN has launched pilot projects with tribal farmers in the north coastal regions of Andhra Pradesh, **transforming traditional farm ponds into Eco Farm Ponds**. To date, over 200 farm ponds have been converted into Eco Farm Ponds in the ASR and Manyam districts of Andhra Pradesh. This initiative has demonstrated significant benefits, with farmers recognizing the value of transforming conventional farm ponds into eco-friendly, multifunctional resources.

BENEFITS OF ECO FARM PONDS

- **Collects and stores rainwater and surface runoff**, increasing infiltration of water, reducing dependence on external water sources and ensuring water irrigation availability during dry periods.
- **Bund Plantations:** Provides diverse fruits and vegetables, improving household nutrition and generating additional income from produce sales.



- **Water Sustainability:** Recharges local groundwater levels, offering a reliable water source for cattle during droughts.
- **Support for Fisheries and Crops:** Enables fish farming as an additional livelihood activity and sustains irrigation for Rabi crops, increasing agricultural productivity.

THE POND ECOSYSTEM

A pond ecosystem consists of four interdependent components: water, plants, fish, and microorganisms. Each element relies on the others to create a stable and healthy environment. Water quality directly affects the health of fish and plants, which in turn influences the microbial balance necessary for organic matter decomposition. By recognizing the interdependence of the pond ecosystem's components and adopting sustainable management practices, farmers can unlock the full potential of their farm ponds, leading to a more resilient and productive agricultural system.

WATER QUALITY MANAGEMENT

Regular monitoring of your pond's water quality parameters is crucial to prevent imbalances and ensure a healthy ecosystem. Periodic testing of physical parameters like turbidity, temperature, plankton density and chemical parameters like pH, alkalinity, dissolved oxygen content, dissolved nutrients and contaminants enables you to identify and address potential issues before they become severe. Improving water quality and circulation is also vital, as it prevents stagnation, stabilizes oxygen levels, and prevents the buildup of harmful gases like higher ammonia and methane concentration. A well-oxygenated pond is essential for supporting a thriving aquatic ecosystem, including fish and other aquatic life. When introducing fish to your pond, consider species that are adapted to your region and compatible with the ecosystem. Additionally, beneficial bacteria and microorganisms play a vital role in breaking down organic waste and cycling nutrients, maintaining the delicate



balance of the pond ecosystem. To promote a healthy ecosystem, opt for organic or natural pond treatments whenever possible, such as cleaning weeds, manure & lime applications when the pond is dry. Regular removal of fallen leaves and dead plants is also essential to prevent decay from overwhelming beneficial bacteria, ensuring a balanced and thriving pond ecosystem.



WHY SHOULD WE FOCUS ON ECO FARM PONDS IN JIVA AREAS

Farm ponds play a vital role in safeguarding crops during dry spells, enabling farmers to irrigate water-efficient crops like millets and vegetables during the rabi season. By integrating horticulture and fisheries, farmers can diversify their income streams and increase their earnings. Moreover, a single farm pond can have a ripple effect, benefiting not just the owner but also neighbouring farmers. One farmer with a farm pond can support at least three neighbouring farmers, helping them to save their crops during times of water scarcity. This not only ensures food security but also fosters a sense of community and cooperation among farmers, making farm ponds a valuable asset for rural livelihoods. By leveraging farm ponds, farmers

can mitigate the risks associated with drought and uncertainty, and instead focus on cultivating a more resilient and profitable agricultural enterprise.

HOW TO MAP WATER BODIES:

A participatory planning exercise will be done with the VO women's federation members through an E-PRA exercise to identify existing farm ponds and potential sites for the creation of water bodies on both private and common lands. Assess the sites scientifically and discuss thoroughly with beneficiaries the community contribution and willingness to convert their farming practices into natural farming. Collect the GPS coordination details of selected sites and get the baseline info of farmers. An internal MoA will be made between the beneficiary and VO and GP leaders to ensure the sustainability of the initiative.

PRIORITIZATION OF FRUITS AND VEGETABLES TO BE GROWN ON TANK BUNDS



Conduct a separate meeting with all the Farm Pond owners in a village to prioritize fruits and vegetables per the local agro-ecological

context, Fruit species like Papaya, Banana and Coconut, and Jamun can be considered and Cucurbits like ridge guard, bottle guard and Bens. Red gram and Marigold flowers can be planted on dyke.

INTRODUCING WATER ECOSYSTEM SERVICES

An innovative enterprise model is being established to provide water ecosystem services to 5-10 farmers, with a focus on those who own Eco farm ponds. This enterprise offers a unique service where farmers can access irrigation support by hiring a solar energy-powered cart to lift water from their pond and store it in a 1000-litre drum. This on-demand service allows farmers to irrigate their crops as needed, providing a reliable and sustainable solution for their water requirements. By leveraging solar energy and a pay-per-use model, this enterprise aims to make water management more efficient, affordable, and environmentally friendly, ultimately supporting the livelihoods of smallholder farmers and promoting sustainable agriculture practices.

CONVERTING POND TO ECO-FARM POND



[Before]



[After]



TOTAL ECO FARM POND BUDGET BREAK UP

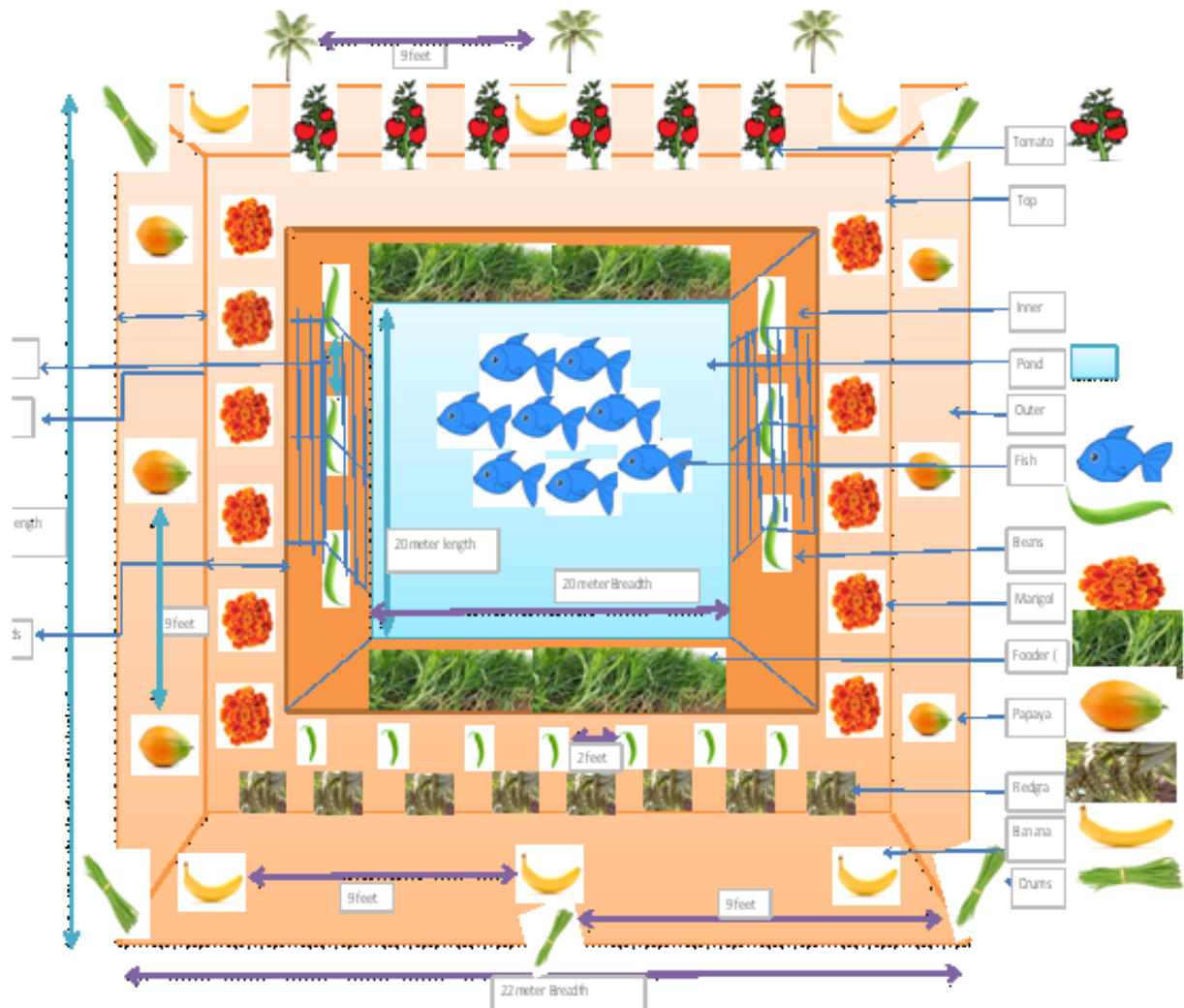
Size: 20x20x2

INTENSIFICATION COST

Particulars	Unit	No. Of Units	Unit Cost	Total Cost	Specifications
Banana	Nos. of plants	14	25	350	Distance maintained at 9 ft (2 opposite sides)- outer dykes
Papaya	Nos. of plants	14	25	350	Distance maintained at 9 ft (2 opposite sides)- outer dykes
Coconut	Nos. of plants	4	300	1200	18 ft distance or Corners
Beans Bottle gourd / land race	100 gms / pond	1	25	25	Distance at 5 ft (2 opposite sides)- Mid inner dykes with Machan model
Fodder (Sesbania/ S. Napier)	No of plants	40	5	200	Distance maintained at 3.2 ft (2 opposite sides)- Lower inner dykes - Napier, Sesbania- outer dyke
Chilli / Tomato	7 gms / pond	1	25	25	Distance maintained at 2 ft (2 opposite sides)- inner edge dykes
Drumstick	5 gms / pond	14	20	280	Distance maintained at 9 ft (2 opposite sides)- outer dykes
Red gram – Perennial	100 gms / pond	1	20	20	Distance maintained at 3 ft (2 opposite sides)- Top Bunds
Vegetables / Marigold	50 gms/pond	1	50	50	Distance maintained at 3 ft (2 opposite sides)- Top Bunds
TOTAL		90		2500	

Note: Plant types / Nos. / Amount might vary in the local context.

DESIGN AND LAYOUT OF INTENSIFICATION



✉ FOR MORE DETAILS ON THIS MATERIAL, PLEASE CONTACT

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