Pond Liners to Save Water and Ease Maintenance

Preserving Water, Pond Liners for Sustainable Fish Farming.

Pond liners, made of materials like PVC or polyethylene, act as synthetic geomembranes, preserving water, enhancing biosecurity, and simplifying pond maintenance. They are adaptable to various pond sizes and shapes, with plastic liners being robust but slightly harder to install in smaller ponds.

Excavated pond with liner

WorldFish
Bernadette Fregene

This technology is TAAT1 validated.

8•9 Scaling readiness: idea maturity: 8/9; level of use: 9/9

Cost: $$$ **500 USD**
a 15m x 10m x 1m pond.

ROI: $$$ **50 %**
reduction in water-related costs

2 - 3.5 USD/square meter
Sheet plastic

IP
Open source / open access

Problem

- Water seepage on porous soils like sands and silts causes significant water loss in ponds.
- Evaporation, especially in hot climates, further reduces water availability for fish farming.
- Algal blooms due to excessive nutrient levels can degrade water quality, affecting fish health and productivity.
- Inefficient nutrient cycling between water and sediment occurs without pond liners, necessitating intensive maintenance.
- Sandy soils and regions with limited access to freshwater are particularly vulnerable to water loss, worsening water scarcity for fish farmers.

Solution

- Prevents water loss and reduces evaporation by creating impermeable barriers.
- Enhances water quality by preventing algal blooms and promoting nutrient cycling.
- Facilitates pond construction in areas with porous soils or limited freshwater access.
- Offers flexibility in pond size and shape, accommodating different landscapes.
- Provides options for different liner materials, thicknesses, and installation techniques to suit diverse needs.

Key points to design your business plan

- Technology reduces water seepage and evaporation, conserving resources and cutting aquaculture costs.
- Promotes responsible water management, maintaining optimal water levels and preventing contamination.
- Aids in mitigating climate change impacts by conserving water and reducing emissions.
- Consider variable investment costs and delivery expenses for effective implementation.
- Context-specific methods should be identified for land leveling and water lifting.
- Key figures include plastic sheet costs, ranging from USD 2 to 3.50 per square meter.
- Plastic liner with sealing and installation costs around USD 500 for a 15 m x 10 m x 1 m pond.
- Rubber sheet lining can decrease water loss by up to 50%.
- Collaboration with aquaculture stakeholders is crucial for successful implementation.

Gender assessment 3

Climate impact 7

Technology from

ProPAS

Commodities

Fish

Sustainable Development Goals

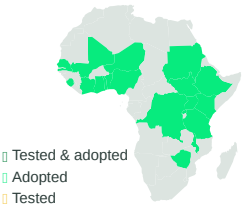
6 CLEAN WATER AND SANITATION

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Categories

Production, Equipment, Water management

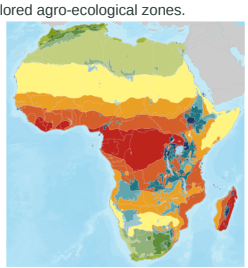
Tested/adopted in



Tested & adopted
Adopted
Tested

Where it can be used

This technology can be used in the colored agro-ecological zones.



Target groups

Fish Farmers