BORTONI

Project

Felight

The Smart Solar Lamp Revolutionizing Fish Farming.

TASNIMUL HASAN TAOHID | MD ASIF HASAN OVI

SCAN ME

Introduction

Felight is an eco-friendly, solar-powered lighting solution designed to support sustainable fish farming in rural areas. It helps reduce dependency on artificial fish feed by attracting natural insects, promoting a healthier aquatic environment. Our innovation aims to lower operational costs for fish farmers while minimizing environmental impact.

Problem

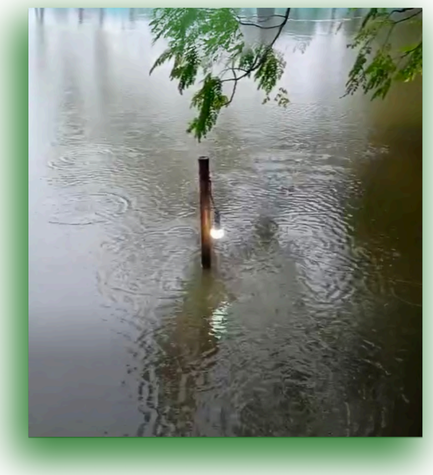
Fish farmers traditionally use AC-powered lights to attract insects, providing natural food for fish to save some money instead of buying fish feeds. Which called **Phototaxis feeding**. However, this method is **unsafe**, **costly**, and **environmentally unsustainable.**

High cost of Pellet Fish feed
(25-decimal pond / 0.1012 hectares
Annual Feed Cost: 3,500 kg × Tk. 72/kg = Tk. 252,000)

Traditional lighting setup Cost **2000-4000** tk

Electricity bills **200-400 TK/month.**

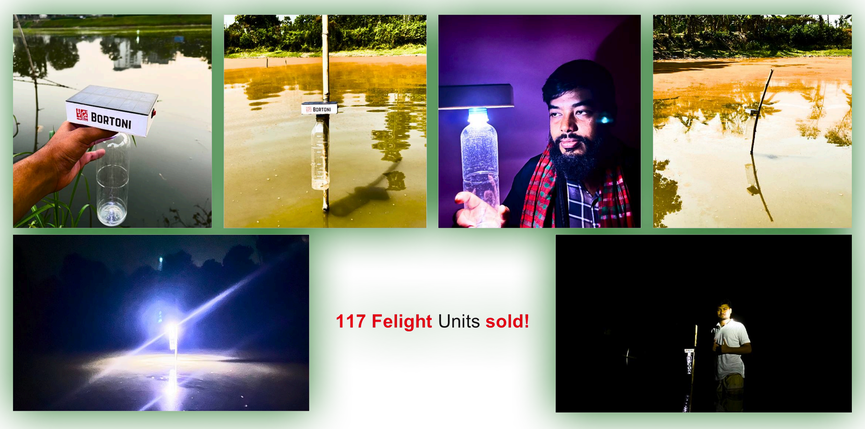
Power waste **120-150 kWh/month.**



Solution

Self-Sustaining Design: Felight features a built-in solar panel and rechargeable battery, operating automatically without external power sources.
Cost Savings: Felight can reduce feed costs by up to 40–60% by attracting insects (phototaxis fish feeding). For example, in a 25-decimal pond, annual feed savings could range from Tk. 100,800 to Tk. 151,200.
No Electricity Bills: Operates entirely on solar energy, eliminating monthly electricity costs.
Enhanced Fish Nutrition: Insects are rich in proteins and nutrients, improving the fish's health and growth.
Sustainable Farming: Promotes eco-friendly aquaculture by reducing feed reliance and recycling plastic bottles.

Traction



117 Felight Units sold!

Pricing of Product

Cost based pricing approach

Production Cost = 360 Taka
Logistic & overheads = 140
Total cost = 500

Selling Price = 800 Taka

Net Profit = 300 Taka (37%)

Felight aligns with 4 SDG Goals

Felight runs on solar power, making clean energy accessible and eliminating electricity costs for fish farmers.

Felight reduces the need for artificial feed and reuses plastic bottles, promoting sustainable farming and waste reduction.

By lowering fish farming costs by up to 60%, Felight increases profit margins and supports income growth in rural communities.

Felight supports healthier aquatic ecosystems by reducing chemical feed use and encouraging natural, eco-friendly fish feeding methods.

Impact

For Aquaculture: Felight minimizes operational costs and increases productivity by creating a safer, more efficient feeding method for **4.27 million ponds** in Bangladesh.

Scalability :
It can be scaled for use in fish farms, rural communities, and even for outdoor activities, proving its wide-reaching impact.

Affordability :
Felight is designed to be affordable and easy to deploy, with minimal maintenance. Manufacturing cost only **360 Taka.**

Sustainability :
Powered entirely by solar energy, embodies the principles of green energy, reducing carbon footprints and promoting sustainable development in line with global energy goals.

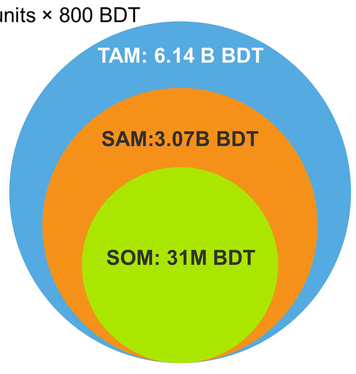
Size of Market

in Bangladesh

TAM (Total Addressable Market):
4.27 million ponds × 1.8 units × 800 BDT
= 6,141,600,000 BDT
= 6.14 B BDT

SAM (50% of TAM):
50% of 6.14 B BDT
= 3.07 B BDT

SOM (1% of SAM):
1% of 3.07 B BDT
= 31 M



Business Model Canvas

KEY PARTNERS
- Fish farming communities and cooperatives
- Government agricultural/fisheries departments
- NGOs and grant providers (e.g., ActionAid)
- Solar tech suppliers and plastic recyclers
- Local distributors and agents

KEY ACTIVITIES
- Product R&D and manufacturing of Felight
- Awareness and training for fish farmers
- Field testing and optimization
- Logistics, installation, and after-sales service
- Monitoring impact and gathering user feedback

VALUE PROPOSITIONS
- Reduces fish feed costs by 40–60%
- Operates automatically using solar power—no electricity bills
- Enhances fish nutrition naturally by attracting insects
- Eco-friendly and sustainable with reused materials
- Increases profitability for small-scale fish farmers

CUSTOMER RELATIONSHIPS
- Community-level training and demos
- Continuous engagement through field visits
- After-sales support via local agents
- Social media updates and feedback loops

CUSTOMER SEGMENTS
- Rural and small-scale fish farmers
- Fishery cooperatives
- NGOs working on rural development
- Government procurement projects

KEY RESOURCES
- Technical expertise and product IP
- Solar and electronics components
- Plastic bottles and sustainable materials
- Field team and installation network
- Data on performance and impact

CHANNELS
- Direct sales through field agents
- NGO and government programs
- Events, exhibitions, and rural expos
- Online ordering via website
- Word-of-mouth and farmer networks

COST STRUCTURE
- R&D and prototyping
- Component sourcing (solar panel, electronics, plastic)
- Team salaries and logistics
- Manufacturing and assembly
- Marketing and awareness campaigns

REVENUE STREAMS
- One-time sale of Felight units
- Bulk sales to NGOs or govt. programs
- Possible subscription for maintenance or upgrades
- Custom installations and consultancy for large fish farms

ESG BENEFITS
- Provides clean energy access (solar-based)
- Reduces plastic waste by reusing bottles
- Improves livelihoods of rural communities
- Promotes eco-friendly aquaculture practices
- Supports biodiversity through natural feeding

ESG IMPACTS
- Lowers dependency on commercial fish feed
- Minimizes environmental harm from feed runoff
- Builds trust and reputation in sustainable innovation
- Transparent operations with traceable impact data
- Compliant with local environmental and business laws

Goals

Our goals is revolutionizing aquaculture and rural lighting. With **patentable Felight,** we're not just lighting up ponds and pathways, we're illuminating a brighter, more sustainable future for all.

01

Enhance Aquaculture Productivity:

Increase fish yields by 30% and reduce feed costs by 40% in target regions.

02

Promote Renewable Energy Use:

Deploy Felight in 50% of major fishing communities, reducing carbon emissions by 25% by 2027

03

Boost Local Economies:

Create 500 jobs and increase local economic activities by 15% in the first two years.