



TECHNO INDIA UNIVERSITY

W E S T B E N G A L



# SOILGUARD



NATURE'S ALLY FARMER'S FRIEND



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**India's agricultural backbone—its 110+ million small and marginal farmers—is under silent threat from severe soil degradation. Years of excessive chemical use, monocropping, and poor soil**

**management have left over 30% of India's cultivable land degraded, leading to declining yields, lower farm income, and rising input costs.**

**Government programs like the Soil Health Card scheme exist, but suffer from delays, one-size-fits-all advice, and lack of farmer-friendly interpretation. Most farmers either don't receive their reports in time or are unable to act on the recommendations due to cost, accessibility, or awareness gaps. At the same time, sustainable and regenerative farming practices—like composting, mulching, and biofertilizers—are effective but fragmented, poorly marketed, and rarely personalized to each farmer's soil.**

#### **The Core Problem:**

- Farmers lack access to real-time, affordable, and actionable soil health insights and eco-friendly solutions, customized to their land and delivered in a simple, accessible format.

#### **What This Leads To:**

- Over-reliance on chemical fertilizers and pesticides
- Depleted soil organic matter and microbial life
- Water table pollution and carbon loss
- Reduced long-term yield and climate resilience

#### **Why It Matters:**

Regenerating soil health is the foundation for sustainable agriculture, food security, and climate adaptation. Without accessible, farmer-first tools, rural India risks losing both productivity and ecological balance.





# OUR MISSION

- Reviving Soil Health: Addressing degradation by replacing harmful chemical inputs with eco-friendly, regenerative solutions like compost and biofertilizers.
- Making Tech Accessible: Bridging the digital gap for small and marginal farmers through mobile platforms and multilingual chatbot support.
- Empowering Farmers: Boosting income and resilience by democratizing bio-soil testing and personalized guidance rooted in science and local wisdom.
- Scaling Sustainability: Building a climate-smart model that restores biodiversity, ensures food security, and protects the environment.

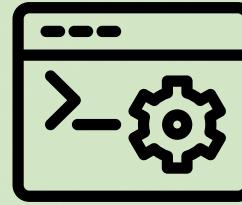


# MILESTONE



## Logo & Brand Identity Created

Logo with shield, soil & leaf – symbolizing protection.  
Tagline: Nature's Ally, Farmer's Friend.



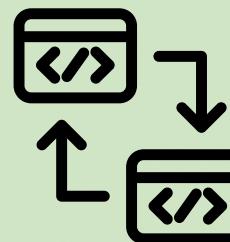
## Website Developed 300 Trees Revived

Website launched to showcase services, kits, and support.  
Revived 300+ trees using bio-soil care.



## Chatbot Prototype Launched

Launched WhatsApp chatbot for soil reports and farmer support.



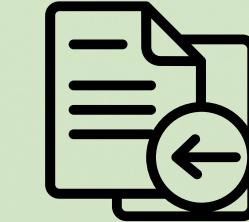
## Convert Website to Mobile App

Launching Android app with offline access, alerts, and test reminders.



## Multilingual & Smarter Chatbot

Upgrading chatbot with regional languages, voice support, and local farming insights.



## Product Sales via Social Media Ads

Promote eco-products via WhatsApp, Instagram, YouTube, using farmer testimonials for trust.





### MONTH 1

#### ACHIEVEMENTS:

- In our initial month, we engaged in brainstorming sessions that led to full development of the blueprint of Soilguard

#### CHALLENGES FACED :

- Financial limitations caused a delay, during which we focused on identifying viable options for SoilGuard.

### MONTH 2

#### ACHIEVEMENTS:

- We officially rolled out the branding elements—tagline, logo and released the Biosoil minor kit.

#### CHALLENGES FACED :

- Key hurdles arose around the soil testing process: we struggled to access reliable labs and establish a method for effective soil collection, making the kit indispensable.

### MONTH 3

#### ACHIEVEMENTS:

- We launched our first website—a minimalist version reflecting our early-stage progress. It's currently feature-light, but we're actively enhancing it.

#### CHALLENGES FACED :

- Farmer outreach was hindered by digital literacy gaps, which affected both education and trust-building efforts. Moreover, managing social media integration demanded substantial time and resources.

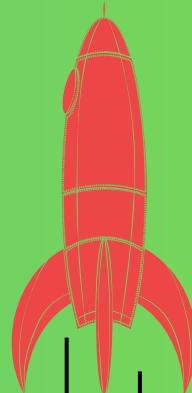
### MONTH 4

#### ACHIEVEMENTS:

- We successfully launched the first working version of SoilGuard—our chatbot designed to provide advisory support. While it's still in the early training phase and undergoing continuous improvement, this marks a key milestone in our development journey.

#### CHALLENGES FACED :

- Our current challenge lies in implementing multilingual support. As SoilGuard scales, ensuring it communicates effectively across regional languages has become essential for deeper farmer engagement and usability.





# FINANCIAL ANALYSIS

## REVENUE STREAMS

- **Soil Testing Fee-** ₹50 - ₹100 per farmer (subsidized/free initial tests)
- **Soil Amendment Kits** - ₹300 - ₹1000 per acre (bundled with natural inputs)
- **Consulting Subscription-** ₹50/month per farmer (year-round monitoring)
- **Grants and CSR Funding**
- **Opportunities from government and CSR initiatives**

## STARTUP REQUIREMENTS

### *Initial Investment :~*

- **Soil kits/lab tie-up:** ₹10,000
- **WhatsApp chatbot/advisory setup:** ₹5,000
- **Compost/bio-input stock:** ₹15,000
- **Local outreach and education:** ₹5,000
- **Total Initial Investment:** ₹35,000 for pilot in one village

## PROFITABILITY ANALYSIS

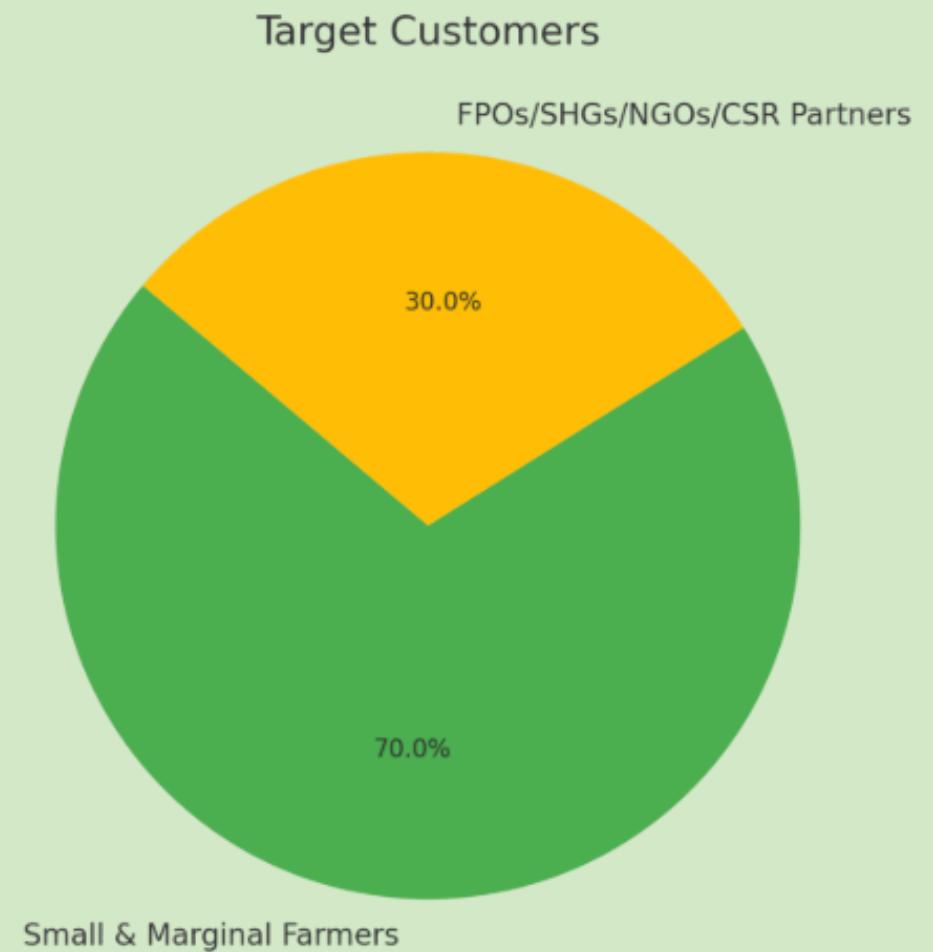
### *Break-Even Analysis*

- **Fixed Costs:** ₹35,000 (initial investment) + ₹240,000 (annual operating costs) = ₹275,000.
- **Revenue Projections:** If total revenue from all streams reaches ₹1,00,000 in the first year, the profit would be: Math input error
- **Break-Even Point:** To cover fixed costs, SoilGuard needs to generate approximately ₹275,000 in revenue.

# MARKET ANALYSIS

## Target Market:

- Approximately 140 million farmers in India, with 80% being small or marginal farmers.
- Soil Degradation: Affects over 50% of farms, with 30%+ of arable land impacted.



## Growth of Bio-Inputs Market:

- Expected growth at 11% CAGR from 2023 to 2028, indicating increasing demand for eco-friendly agricultural solutions.



## CSR Funding Potential:

- Estimated annual opportunity of ₹5000+ crore in agriculture and climate restoration.



# HOW SOILGUARD SOLVES PROBLEM IN REAL TIME



<i>Competitor / Type</i>	<i>Their USP</i>	<i>Gaps They Leave</i>	<i>SoilGuard Advantage</i>
<b>Government Soil Health Card</b>	<b>Free nationwide soil testing</b>	<b>Slow updates, generic advice, no follow-up</b>	<b>Fast, affordable bio-soil testing with personalized solutions</b>
<b>Agri Apps (e.g. Kisan Suvidha)</b>	<b>Crop/weather info, mandi prices</b>	<b>Language barrier, poor personalization</b>	<b>Multilingual WhatsApp chatbot – no app needed, local language support</b>
<b>Big AgriTech Startups (e.g. DeHaat)</b>	<b>Input delivery, advisory, e-commerce</b>	<b>Focused on sales, not soil regeneration</b>	<b>Natural, sustainable compost-based solutions focused on long-term soil health</b>
<b>Private Soil Labs</b>	<b>Detailed, scientific reports</b>	<b>Expensive, not rural-accessible</b>	<b>₹50–₹100 soil test pricing; designed for small and marginal farmers</b>
<b>Local Input Sellers</b>	<b>On-demand chemical fertilizers</b>	<b>Profit-driven, no focus on soil health</b>	<b>Organic, yield-improving alternatives like neem cake and vermiwash</b>



# COMPETITIVE ANALYSIS

COMPETITOR	THEIR USP	OUR USP
GOVT. SOIL HEALTH CARD	FREE NATIONWIDE SOIL TESTING	AFFORDABLE BIO-SOIL TESTING (50RS -100RS)
AGRI APPs (KISAN SUVIDHA)	CROP/WEATHER INFO, MANDI PRICES	MULTILINGUAL WHATSAPP CHATBOT
BIG ARGITECH STARTUPs (DeHaat, AgroStarO	INPUT DELIVERY, ADVISORY, E-COMMERCE	PERSONALISED NATURAL SOLUTIONS
PRIVATE SOIL LABS	DETAILED & SCIENTIFIC REPORTS	PAY-IF-IMPROVED YIELD CONSULTING MODEL
LOCAL INPUT SELLERS	ON DEMAND CHEMICAL FERTILIZERS	CSR & NGO FRIENDLY DESIGN

# Thank You!

