

PureSoil Tech: Sustainable Solutions for Modern Agriculture



1. Introduction: A Farmer's Story

Ana, a dedicated farmer in the Netherlands, has cultivated leafy greens for local markets for years, continuing a cherished family tradition. Her commitment has always been to provide fresh, healthy produce while stewarding the land with care. However, with the European Union's increasingly stringent nitrate regulations, Ana faced a significant challenge. She needed a sustainable, future-proof solution to manage her soil responsibly without sacrificing yield or quality. Her research led her to the AquaSoil Filter from Pure Soil Tech—a groundbreaking, biochar-based system designed to purify polluted irrigation water while simultaneously restoring soil health.

A Farmer's Challenge

1. EU Regulations

- Reduce environmental footprint
- The EU Water Framework Directive
- The Nitrates Directive
- Regulations: stricter, non-compliance
→ Fines or restrictions



2. The Problem: A Convergence of Agricultural Challenges

Across Europe, farmers grapple with a multifaceted problem: the water they rely on is often contaminated with nitrates, pesticides, and heavy metals. This not only harms crops but also puts farmers at risk of legal and financial penalties for non-compliance with EU environmental regulations. Existing solutions, such as chemical treatments, are frequently too expensive, complex, or ill-suited for agricultural contexts.

2.1. Regulatory Pressures

The EU's Water Framework Directive and the Nitrates Directive impose significant pressure on farmers to reduce their environmental footprint. These regulations are becoming stricter, and failure to comply can lead to substantial fines and operational restrictions. Farmers urgently need affordable, scalable, and sustainable solutions to meet these evolving standards.

2.2. Agrochemical Runoff

Pesticides and herbicides, while essential for crop protection, often seep into the soil and contaminate groundwater and nearby rivers. These chemicals can persist in the

environment for extended periods, harming biodiversity and rendering water sources unsafe for human and animal consumption.

2.3. Nitrate Pollution

The overuse of nitrogen-based fertilizers has led to widespread nitrate leaching into groundwater and surface water, a critical issue across Europe. This contamination not only poses a threat to human health but also causes eutrophication, which severely damages aquatic ecosystems. The Netherlands, with its high livestock density and manure use, has one of the highest nitrogen surpluses in Europe, exacerbating the problem.

2.4. Water Scarcity and Drought

Climate change has introduced a new challenge: increased frequency of droughts, even in traditionally water-abundant regions like the Netherlands. Water shortages make irrigation less efficient, and the problem is compounded when available water sources are polluted, making them more difficult and expensive to treat.

2.5. Soil and Water Salinization

In coastal agricultural areas, rising sea levels and excessive drainage contribute to saltwater intrusion, leading to the salinization of both soil and water. This reduces water quality for irrigation, stresses crops, and degrades soil health over time.

3. The Solution: The AquaSoil Filter

Pure Soil Tech, a Dutch startup founded in 2024, is on a mission to make sustainable farming both possible and practical. We believe that clean water and healthy soil should not be luxuries. That's why we developed the AquaSoil Filter, a unique solution that addresses both water purification and soil regeneration in a single, elegant system.

Clean Water, Healthy Soil — With AquaSoil Filter

- No advanced tech skills needed
- Scales easily
- Low carbon footprint



NOT JUST FILTRATION. NOT JUST SOIL. WE DO BOTH!

Our filter, which is placed directly into the soil, utilizes biochar—a natural, carbon-rich material produced from agricultural waste—to filter contaminants from water while simultaneously revitalizing the soil. It's not just a filtration system; it's a comprehensive solution for sustainable agriculture.

Key Features: - No advanced technical skills needed for installation - Scales easily to different farm sizes - Low carbon footprint through waste biomass utilization - Dual function: NOT JUST FILTRATION. NOT JUST SOIL. WE DO BOTH!

4. The Product: Biochar Production and Application

Our innovative process transforms agricultural waste into a powerful tool for soil and water regeneration.

4.1. The Biochar Production Process



1. **Feedstock Preparation:** The process begins with the collection of chopped wood, which is then dried to reduce its moisture content.
2. **Industrial Pyrolysis:** The dried wood is heated to 350–700°C in a low-oxygen pyrolysis reactor. This thermal decomposition process creates biochar, a lightweight, highly absorbent, carbon-rich solid.
3. **Organic Matter Integration:** The raw biochar is mixed with other organic waste materials, such as nut shells, sawdust, and manure, to enhance its soil-enriching properties.
4. **Post-Processing:** The biochar is then cooled, sieved, and can be "charged" with compost, microbes, or minerals to activate it for optimal performance in the soil.
5. **Application:** Finally, the biochar is evenly spread in the subsoil layer and covered with topsoil, where it enhances soil fertility, moisture retention, and microbial life.

This process is not only effective but also highly sustainable, as it repurposes local waste materials into a high-value product.

5. Business Model: Accessible and Value-Driven

Our business model is designed to be transparent, customer-centric, and aligned with the needs of modern farmers.

5.1. Value Proposition

- **Regulatory Compliance:** Helps farmers meet strict EU regulations.
- **Affordability:** A cost-effective solution compared to industrial alternatives.
- **Dual Function:** Filters water and improves soil health simultaneously.
- **Sustainability:** A low-energy, passive system with a minimal carbon footprint.
- **Ease of Use:** Simple to install and maintain.
- **Durability:** A long lifespan of 5–10 years, offering excellent long-term value.

5.2. Customer Segments

- Small to medium-sized farmers in the EU.
- Agricultural cooperatives.
- Agribusinesses requiring regulatory compliance.
- Environmentally conscious consumers and organizations.

5.3. Customer Relationships

We are committed to building long-term relationships with our customers through:

- **After-Sales Service:** A free 5-year after-sales service.
- **Loyalty Programs:** Subscription models and loyalty rewards.
- **Educational Content:** Regular newsletters, blog posts, and videos.
- **Feedback and Involvement:** Actively seeking customer feedback for continuous improvement.

6. Market Analysis and Strategy

6.1. Market Size and Strategy



The market for our solution is substantial:

- **TAM (Total Addressable Market):** 50% \approx 4.8 million hectares of irrigated cropland are affected by pollution
- **SAM (Serviceable Addressable Market):** 65% affected irrigated cropland
- **SOM (Serviceable Obtainable Market):** 45% potential market

Target Countries: Netherlands, Belgium, France, Germany, Italy, and Luxembourg

6.2. Marketing Strategy

Our go-to-market strategy is threefold:

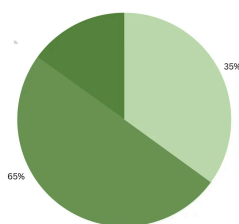
1. **Digital Marketing:** Social Media presence and online engagement
2. **Field Marketing:** Participation in agricultural exhibitions
3. **Partnerships:** Collaboration with Farmer Unions, Environmental Consultants, and other key stakeholders

7. Competitive Landscape



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Market analysis Marketing Strategy



TAM 50% = ~4.8 million hectares of irrigated cropland are affected by pollution.

SAM 65% affected irrigated cropland.

SOM 45% Potential market.

Netherlands, Belgium, France, Germany, Italy, and Luxembourg

Strategies:

Digital Marketing: Social Media

Field Marketing: Exhibitions

Partnerships: Farmer Unions, Environmental Consultants, ...

References:

European Environment Agency - Water
Eurostat - Agriculture

The AquaSoil Filter stands out in the competitive landscape:

Criteria	Pure Soil Tech	Veolia	Pacific Biochar
Target Market	Small to large farmers and companies ✓	Large industrial clients	Broad agricultural, US-based
Price	€1,300/ton ✓	€10,000 + custom systems	€2,000/ton
Installation	DIY and assistance provided ✓	Requires professionals	Manual setup and limited support
Maintenance	Minimal, 5-year warranty ✓	Requires technical service	Seasonal re-application
Soil Health Benefit	Yes ✓	No	Yes ✓
Carbon Footprint	Very low, made from waste biomass ✓	Medium to high	Low ✓
Overall Rating for EU Agri Market	Best fit - practical, affordable ✓	Too complex and costly	Not water filtration focused

Unlike industrial-scale systems from competitors like Veolia, which can cost upwards of €10,000, our solution is priced at an accessible €1,300 per ton. Furthermore, our system is designed for easy, DIY installation and offers the unique dual benefit of water filtration and soil enhancement.

8. Financial Model

8.1. Pricing Structure

- **50kg AquaSoil bag:** €75 (single payment)
- **Bulk pricing:** €1,300/ton (single payment)
- **Subscription model:** €1,170/ton (€234/year for 5 years)
- **Installment plan:** 4 payments over 4 years (€390/ton annually)

8.2. Revenue Projections

The company projects steady revenue growth from 2024 to 2030, with an 18% profitability margin.

8.3. Funding and Vision

Financial Projections (2026): €1M funding allocation - 35% Operational Expenses - 35% Marketing & Administrative - 20% EBITDA - 10% R&D

Vision for Growth: - Expand Production Capacity - Enter New Markets - Boost Sales & Outreach - Enhance R&D capabilities

9. ESG Commitment

Environmental, Social, and Governance (ESG) principles are at the heart of our operations:

Environmental Impact: - Clean water, soil health, and reduced pollution - Low-emission production using waste biomass - Contribution to circular economy principles

Social Responsibility: - Fair working conditions - Education and community engagement - Local community partnerships

Governance Standards: - Clear internal structures - Transparency, ethical sourcing, and data privacy - Compliance with EU regulatory frameworks

10. The Team

Pure Soil Tech was founded by a team of seven passionate and innovative university students who now serve as the company's board members and department heads. Our team of 50 employees in Amsterdam includes scientists, engineers, marketers, and financial analysts, all dedicated to our mission of bringing sustainable, accessible water filtration solutions to the agricultural world.

Our Departments Include: - Research & Development - Marketing - Sales - Operations - Finance

Despite being students, we've created a startup with the energy of a young team, the professionalism of an established company, and a clear mission: to bring sustainable, accessible water filtration solutions to the agricultural world.

This documentation represents the fusion of Pure Soil Tech's comprehensive business plan with visual elements and enhanced details from their presentation materials, providing a complete overview of their innovative AquaSoil Filter technology and business strategy.