Plug and Produce?

Evaluating Hydroponic Viability for Farmers, Schools and Food Access Hubs

Nour El-Naboulsi- Executive Director, Village Hydroponics
Sara Armstrong Donegan- Farm Business Planner, Intervale Center

Session Overview

- Introductions: Who we are & why we're here
- A non-expert, exploratory conversation — not a lecture
- Goals:
  - Share models, numbers, risks, and lessons
  - Split into subgroups: Farmers & Profiteers (Sara) & Access/Education (me)
- This only works if it's a discussion — your participation matters!
- Total session time:
  - 30 min intro + initial Q&A
  - 45 min breakout groups
  - 15 min reflections + final Q&A

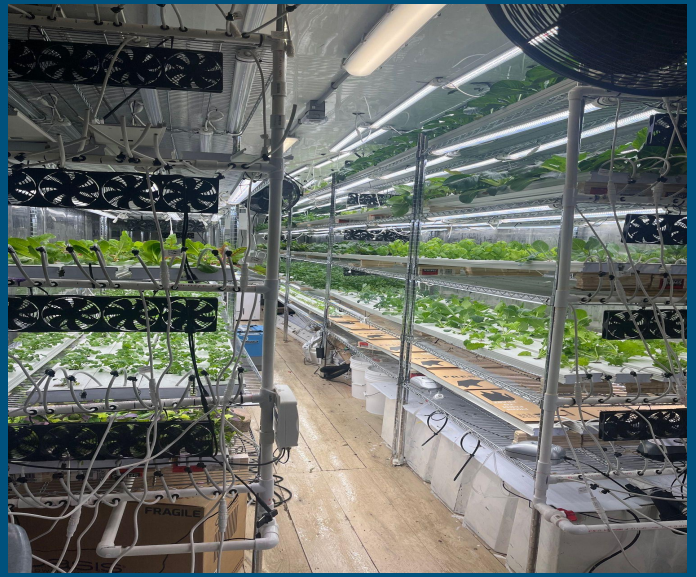
Who we are

Nour El-Naboulsi
Co-Director, The Peoples Farmstand
Founder, Village Hydroponics

Sara Armstrong Donegan
Farm Business Specialist
Intervale Center

Models of Hydroponics: Many!

- Shipping Container Nutrient Film Technique (NFT) – Fully enclosed, grow lights only
- Greenhouse NFT – Mixed light system
- Aeroponic Towers – Root-misted, vertical
- Aquaponics – Plants + fish symbiosis
- DWC (Deep Water Culture) – Great for larger fruiting crops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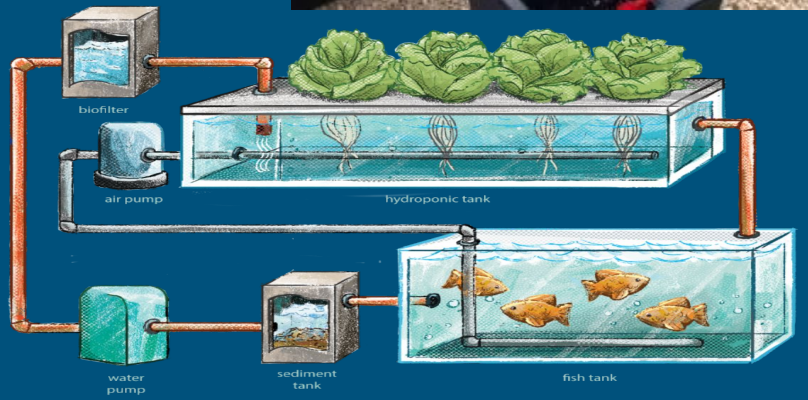
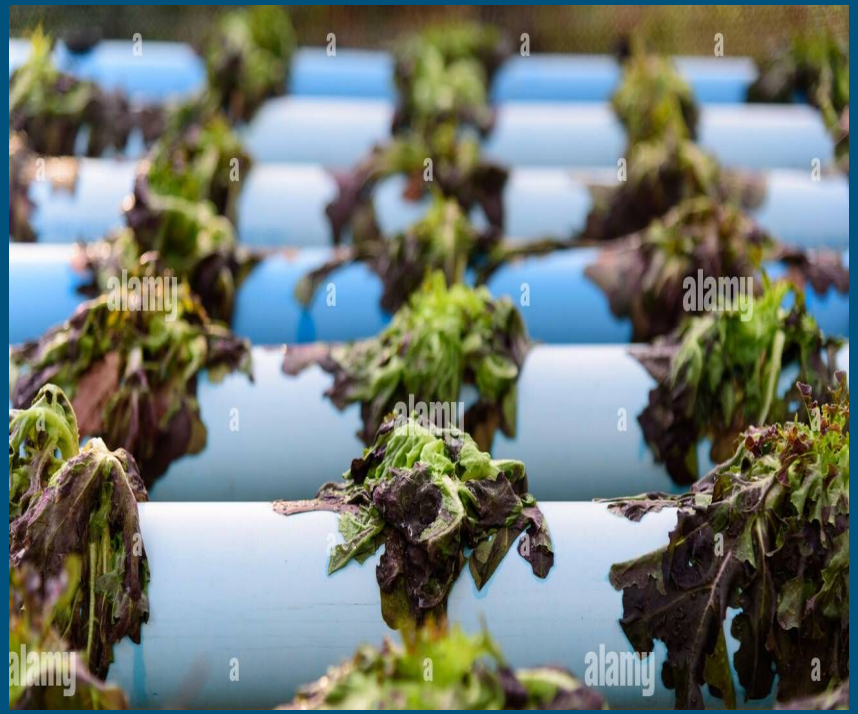

biofilter
air pump
hydroponic tank
water pump
sediment tank
fish tank

Opportunities

- Year-round production – Especially crucial in Vermont's long winters
- Education!
- Hyper-local impact – Lower food miles, fresher product
- Water efficiency – Up to 90% less than soil systems
- Flexibility – Can fit into tight/urban/non-ag land
- Climate resilience – Controlled environment shields from flooding, drought
- Precision & repeatability – Like "3D printing" when dialed in

Risks & Controversies

- High electrical demand — your grid source matters
- Real Organic Project pushback — is soil essential?
- Startup costs can be steep
- High learning curve — especially early seasons
- Site needs: water, electric, drainage, ventilation
- Vulnerability to power loss or equipment failure
- Finding a market that makes it “worth it” is not easy



Village Hydroponics Snapshot

- 501(c)(3) nonprofit rooted in food access + mutual aid
- Fall–Spring hydro season; diversified culturally-relevant crops
- Mix of grant funding, a small CSA, and wholesale
- Built in a shipping container, totally enclosed NFT system

Production Snapshot

- 20 lbs baby greens
- 52 heads bok choy
- 20 lbs Swiss chard
- 15 lbs kale
- 70 bunches cilantro
- 52 heads lettuce

Operational Costs

- Electricity: ~$1,100/month
    - Lower in early weeks (fewer lights running)
- Grow medium: $600 per 6-month season
- Nutrients & pH adjusters: $450 per season
- Seeds: ~$200
- Labor: 20–25 hrs/week (experience dependent)

Grant-Driven Hybrid Model

- Nonprofit model allows grant funding to offset costs
- We prioritize community shareholding, not max revenue
- Testing CSA and small sales to support sustainability
- Could shift to more CSA slots or higher-yield crops for revenue
- Always balancing: community values vs economic viability

Introducing Sara

- Evaluating viability with a business planning lens:
  - Feasibility
  - Opportunities
  - Barriers
- Assessing financials:
  - Start-up
  - Operating Costs
  - Pricing
  - Cash Flow
- Financial tool to take home

Let’s Talk!

Email: villagehydroponics@gmail.com
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Considerations for Farmers

Opportunities or Barriers?

- Markets
- Farm Diversification
- Certifications
- Produce Safety
- Infrastructure
- Labor
- Cash Flow
- Pricing

Let’s talk Financials

- Village Hydroponics 2025 & 26 Projections
- If we “commercialized” Village Hydroponics
- Third scenario- one of your farms or a hypothetical

https://docs.google.com/spreadsheets/d/1BSldrQin3IyXQiHDeUFTp_0p9JIcmYqdrgEBoD8_zGk/edit?usp=sharing

Contact

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