
Small-Scale Spirulina Farms

— D-Lab Pro I: Final Presentation —

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Problem Definition

- We determined the **feasibility** of **small-scale spirulina farms** in Djibouti.
- Malnutrition affects the health of many Djiboutians.

Idea: family-based
Spirulina operations



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Project Vision



Methodology

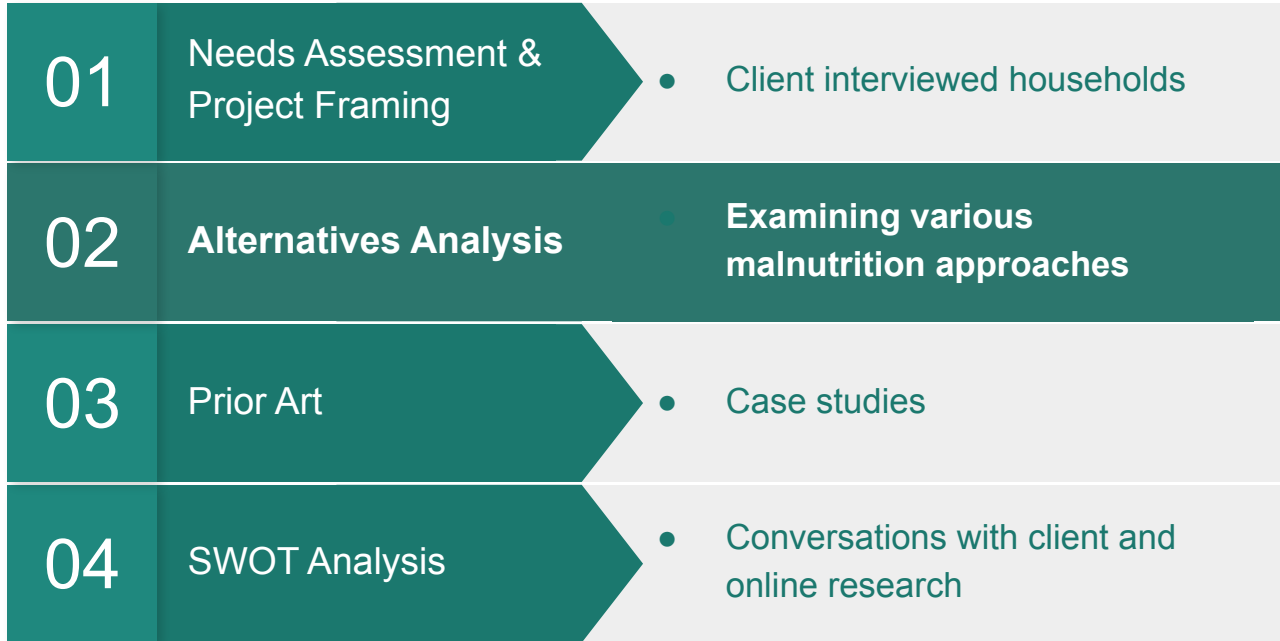
01	Needs Assessment & Project Framing	<ul style="list-style-type: none">• Client interviewed households
02	Alternatives Analysis	<ul style="list-style-type: none">• Examining various malnutrition approaches
03	Prior Art	<ul style="list-style-type: none">• Case studies
04	SWOT Analysis	<ul style="list-style-type: none">• Conversations with client and online research

Results: Needs Assessment & Project Framing

- 10 households interviewed
- Project framing changed client's perspective
 - Moved from urban focus to **rural focus**
 - Client wants to begin awareness initiative
 - Client became more aware of sourcing challenges



Methodology



Alternatives to Spirulina

Brainstorm & Initial Elimination

- Research on malnutrition approaches
- Elimination Reasons

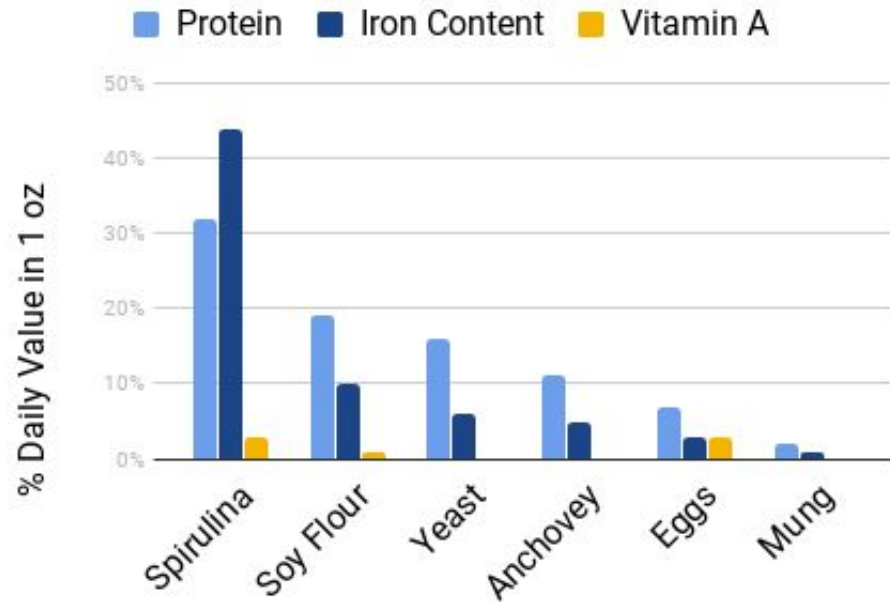
Decision Matrix

- Rated using criteria



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Nutrition Value of Various Foods



Methodology



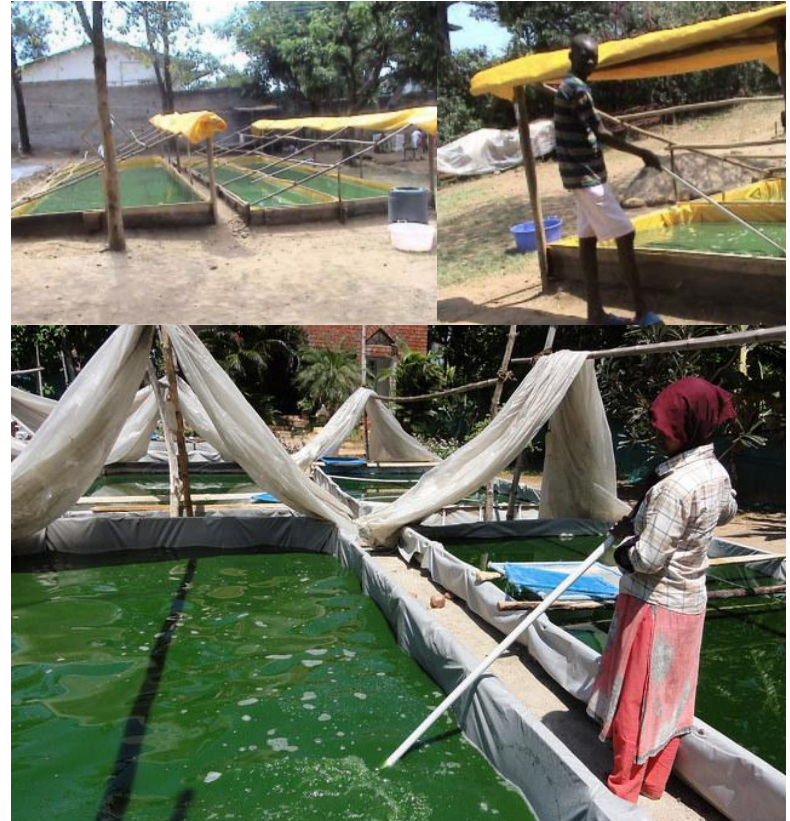
Results: Case Studies

Kenya: IIMSAM

- Successful training programs, production
- Treating vulnerable populations (>200)
- Financial capital
- Market constraints

India: Murugappa Chettiar Research Centre

- Resolved inorganic nutrient market constraint
- Food safety



Methodology

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Results: SWOT Analysis

STRENGTHS

- Team experience
- Passionate client

WEAKNESSES

- Limited communication and direct access to community
- **Lack of startup capital**
- Lack of construction experience

OPPORTUNITIES

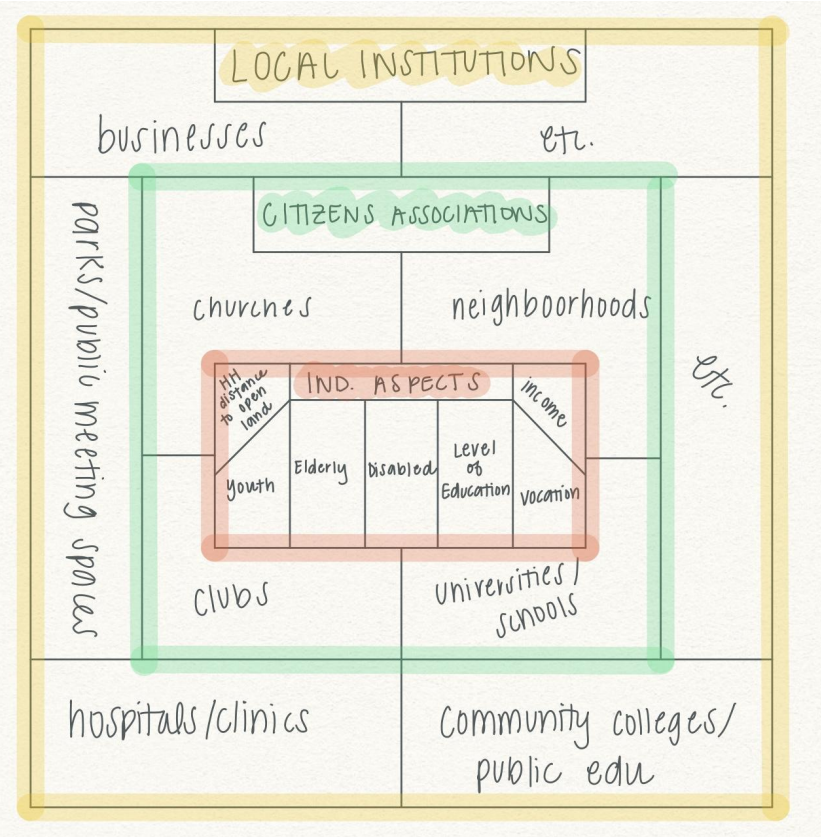
- Conducive climate
- Health need for spirulina
- Grants to apply for

THREATS

- Community members aren't aware of malnutrition
- **Lack of community interest**
- Extreme climate, water scarcity
- **Lack of local inputs**
- Not initially income generating

Recommendations

- **Community Asset Mapping**
 - Local institutions
 - Citizen associations
 - Individual aspects
- **Education**
 - Malnutrition
 - Spirulina's benefits
- **Partnerships**
 - Funding
 - Resources
- **Material Accessibility**
 - Chemical input "kits"
 - Find skilled labor (concrete)



Next Steps

- The project should not continue into D-Lab II
- Questions/Ideas
 - Rural vs urban implementation
 - Sourcing materials
 - Building a team, finding credible leaders for education and delivery
 - Funding
 - Developments in semi-nomadic communities