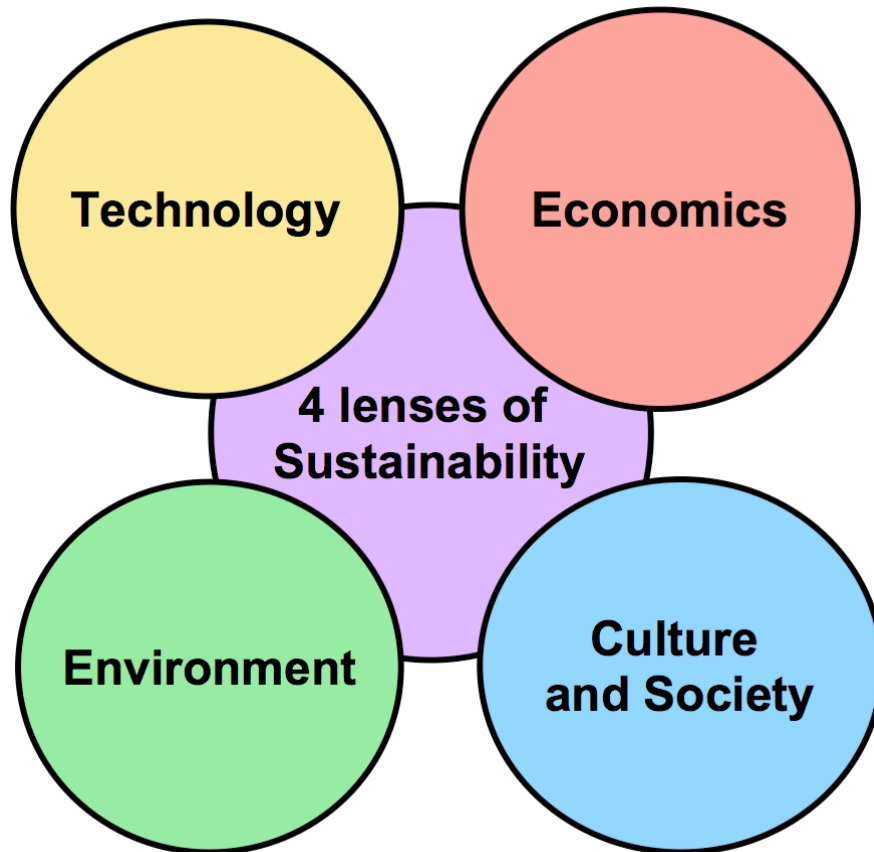


# Using Four Lenses of Sustainability



## A D-Lab Feasibility Studies Notebook

Spring 2016, Working Prototype

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# Using Four Lenses of Sustainability

## A D-Lab Feasibility Studies Notebook

### UC Davis D-Lab I

#### Energy, Agriculture, and Development Class Deliverables

**1**

Introductory Project Briefs and Project Selection

**2**

Project Goal Statement

**3**

Project Framing A

4 lens Broad Overview

**4**

Project Framing B

Articulation of Considerations and Research Directions

**5**

In Depth Research

Literature Review and Sector Analysis

**6**

Project Framing C

Identification of Objective functions and Target Values

Specification of Analytical Tools

**7**

Review for Client Sign Off

**8**

Preliminary Results and Integration of Feedback

**9**

Pre-Review Mentor Feedback

**10**

Results Review

**11**

Final Product



# Using Four Lenses of Sustainability

## A D-Lab Feasibility Studies Notebook

### UC Davis D-Lab I, Winter Quarter

### Energy, Agriculture, and Development Class Deliverables

The following are the 11 deliverables for the class; step by step they lead to the preparation of a feasibility study for your client's project.

## 1

### Introductory Project Briefs and Project Selection

1. Read Introductory Project Briefs.
2. Write a paragraph on your understanding of development, and another on your role in development.
3. On bottom of same page list:
  - a) \_\_\_(aspired degree) in \_\_\_ (program)
  - b) 3 main skills or strengths
  - c) An evaluative matrix with three criteria for selecting projects clearly showing top three ranking projects.
  - d) phone number, email address, skype name.
4. Make it all fit on 1 side of 1 page and bring to first class. It must be in by the end of the first class.

**Week 1**  
**Session 1**

## 2

### Project Goal Statement

1. Assign a Communications Officer for the team. Establish communication with your client and identify best way to communicate.
2. Based on the Project Brief you received, what is the Project Goal Statement? Project Goal Statement should be concise and answer:  
Who Are You? What is the Need? Who are you addressing it for? Why is it important? (1-2 sentences that evolve as you learn more).
3. Starting now you must be able to on the spot recite your statement confidently!

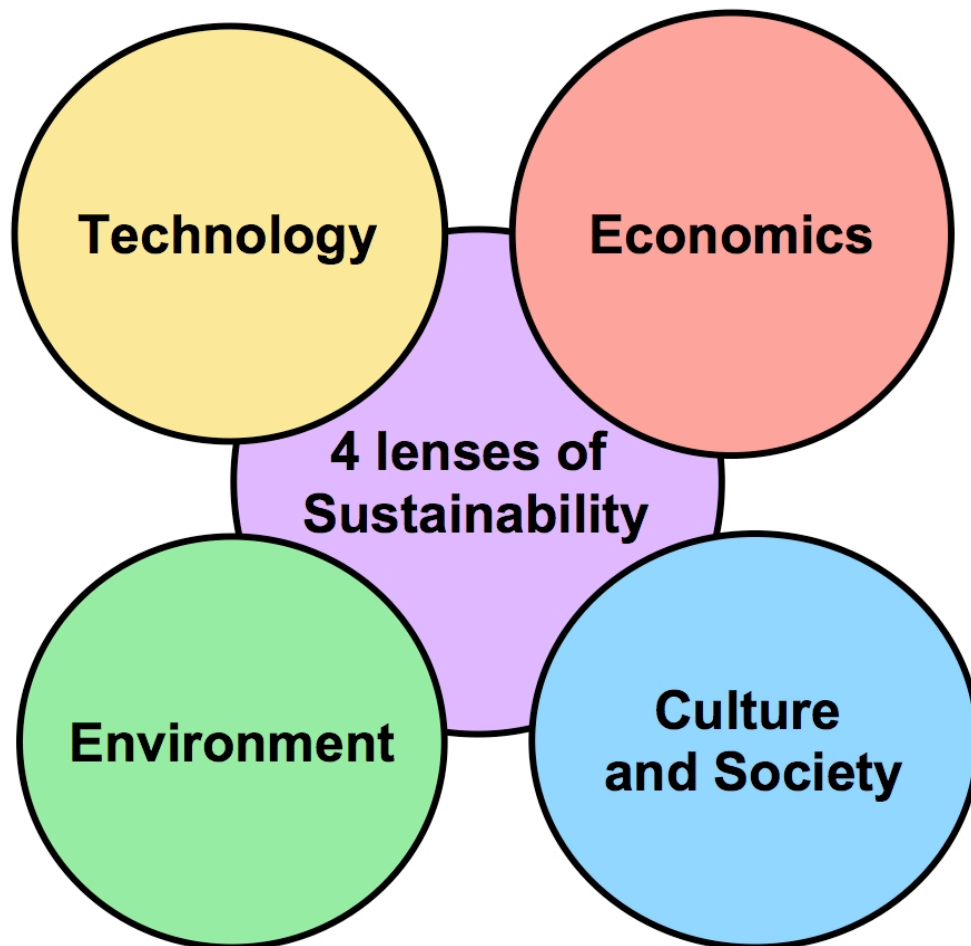
**Week 1**  
**Session 2**

### 3

#### Project Framing A 4 lens Broad Overview

3. Using 4 lenses (Environment, Economics, Society, and Technology) take a broad look at your client's situation, do some initial research, and articulate briefly:

- Who is the client/what is their business?
- What are the project goals? Why?
- Who is the target market/customer?
- What are any known considerations and assumptions?
- What are any known benchmarks?
- What is the approximate timeline?
- What do you think are the final deliverables?



4. On a single page as a team write down your Project Goal Statement, and the answers to the questions above.

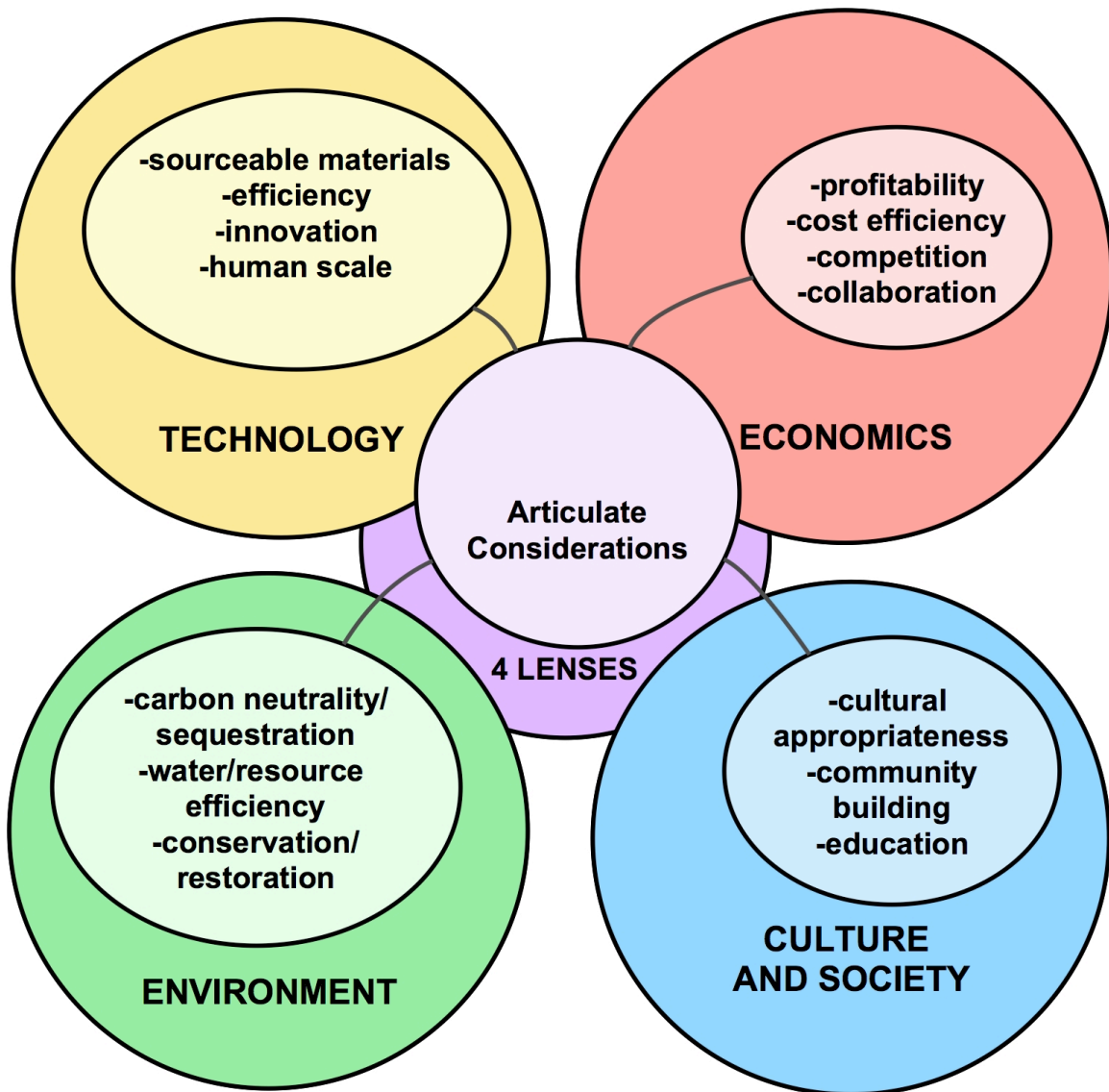
# 4

## Project Framing B

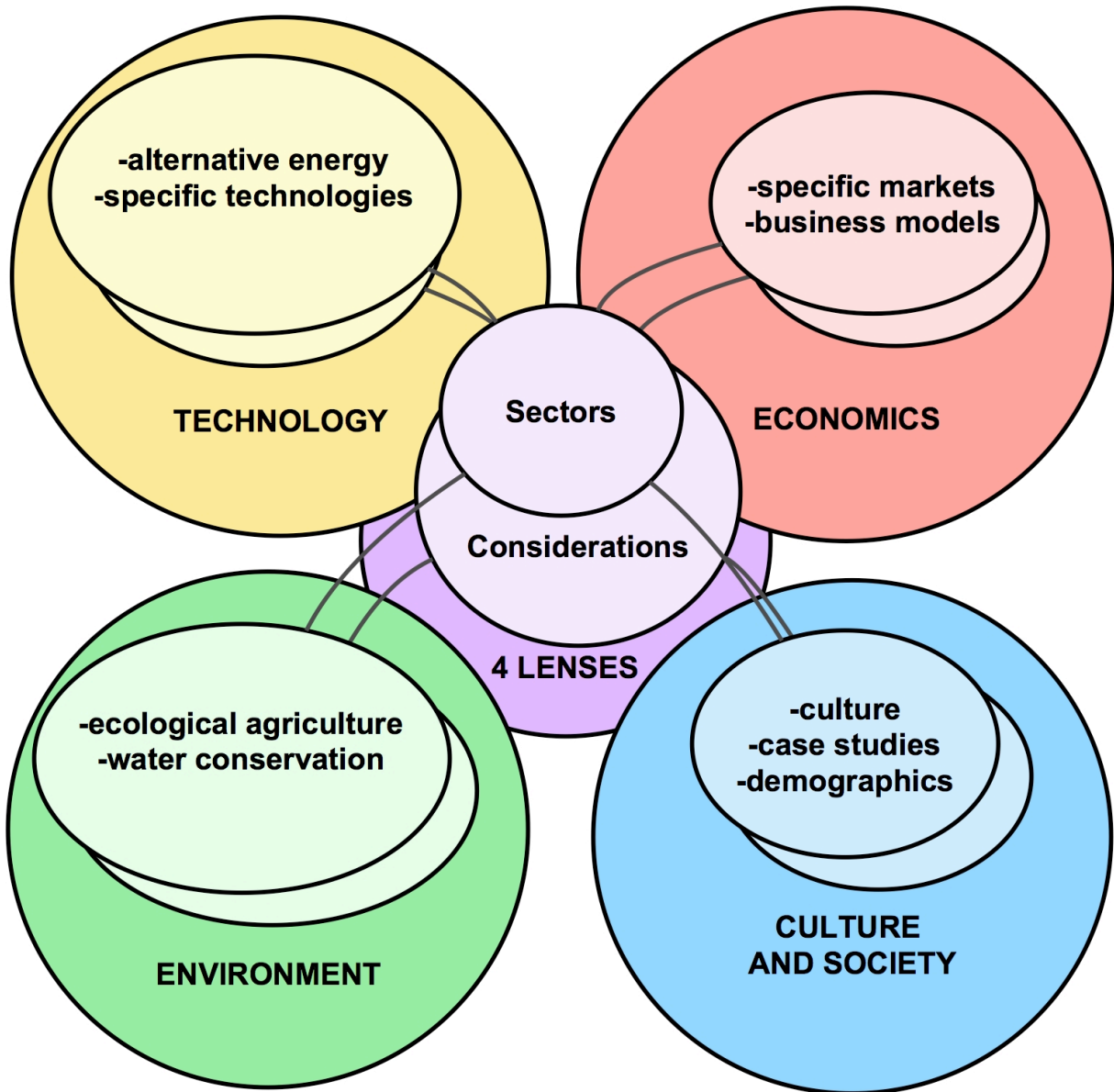
### Articulation of Considerations and Research Directions

Identify the most important “need to know” issues for next decision.

1. What are the specific technical, social, environmental, and financial considerations?



2. What are the gaps in your client's knowledge?
3. What sectors is it necessary to analyze? Each teammate take one.



4. Each teammate will turn in 1 page with project considerations, a simple outline of your sector paper and an annotated bibliography with 3 relevant articles as research leads. 3 sentences that speak to the relevance of each article should do.

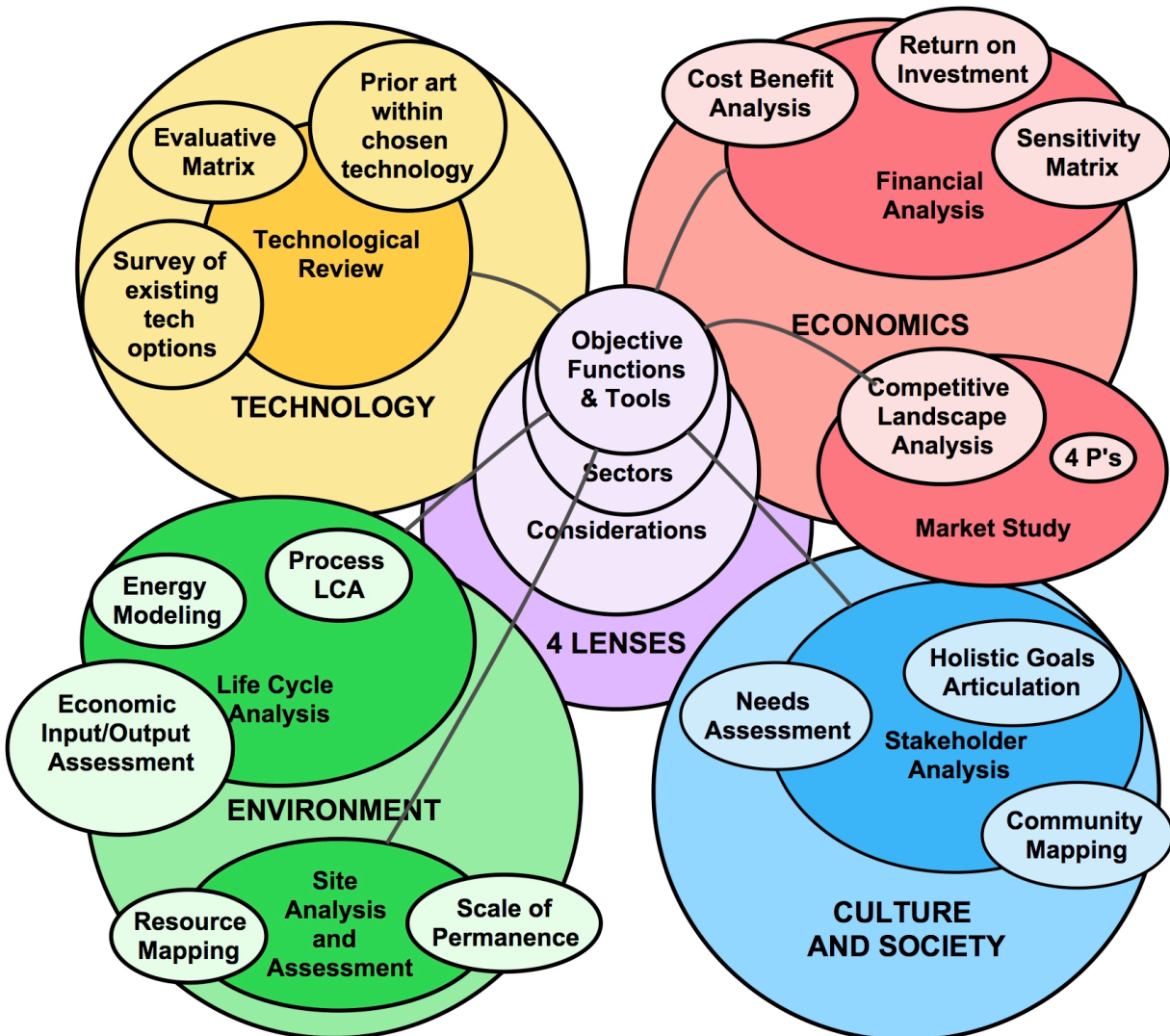
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Project Framing C

Identification of Objective functions and Target Values

Specification of Analytical Tools

1. What are the weak links in the project? Identify the analytical tool(s) that will strengthen them and choose.
2. What is the End Deliverable? What will be your methodology? What is your scope? Constraints and boundaries? Timeline? Budget?
3. Update the project goal statement if necessary.
4. Include the target values for whatever Objective Functions you have identified.



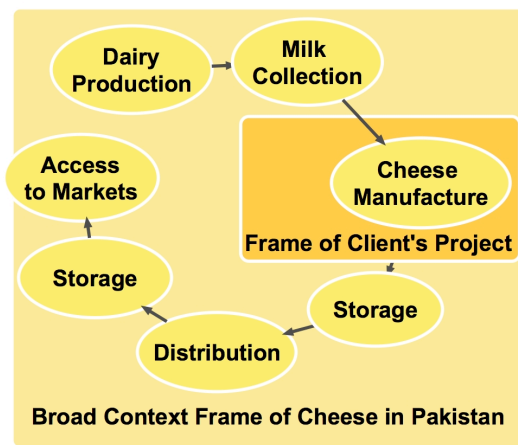
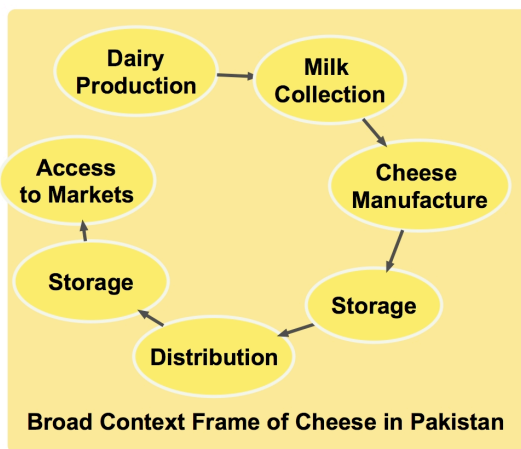
5. As a team get all this down on one page and go over it with your mentor.

## Framing Example

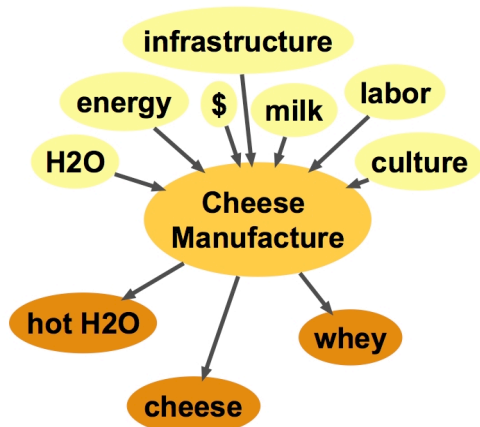
### Cheese Manufacture in Pakistan

In this case provided by an actual UC Davis D-Lab I: Energy, Agriculture, and Development Client, we see how the previous steps in framing help us understand the context of their project and hone in on the aspects of the project that the D-Lab I team could help them with.

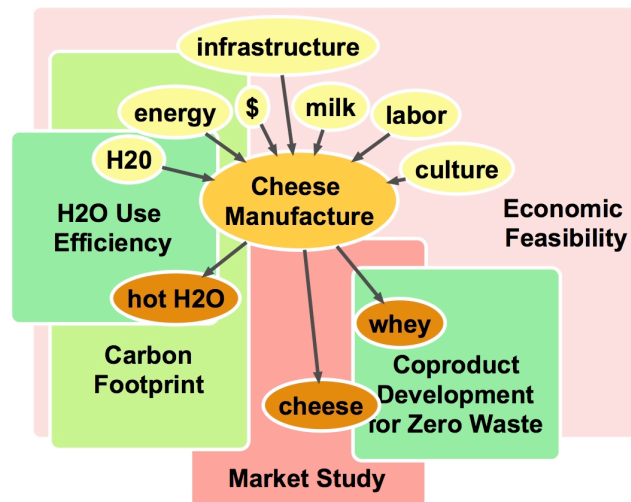
From a bird's eye view of the dairy sector in Pakistan, to cheese manufacture, to the needs and yields of the process and finally specifying what kinds of analysis the team could provide over the course of a ten week quarter.



### Cheese Manufacture Needs and Yields Analysis



### Feasibility Study Frame





## 6

### In Depth Research

#### Literature Review and Sector Analysis

This is meant to be a straightforward and useful Literature Review, research not opinion. Write a five-page paper (double-spaced not counting figures, tables, or pictures and please include these as appropriate) describing the current state of affairs in a sector relevant to the project. Examples: Geography, Climate, Economy, Politics, Agriculture, Energy, Environment, Manufacturing, Micro-finance, Micro-enterprise...

By now you need to have conferred with teammates about this so as to have no overlapping research. This information will be part of your group's presentation.

Discuss projects that are happening in that sector and why it is relevant to your project. You may choose to focus on a sub-sector (for example: Irrigation and water rights rather than all of agriculture, or wind energy rather than all of energy). You can also look at technologies that are being used in other parts of the world that could be applied in your country. Your paper should provide a concise summary of the sector (or sub-sector) and provide useful background information for field projects in that sector.

Be sure to include references and citations from a variety of sources including peer-reviewed publications. Websites, when used, must be referenced correctly. Sector papers are evaluated on a basis of: **relevance** of content, **clarity** of the writing (grammar, spelling, and coherence, tell the reader what you are going to say, say it, then tell the reader what you said!) **quality** of the research, in other words properly cited sources that are not Wikipedia.

#### Week 4

## 7

### Review for Client Sign Off

7 minutes (you will be cut off) to go over:

1. Project Statement
2. Framing
3. Research Findings
4. Proposed Methodology.

Team will get feedback from mentors and reviewers. Assign a note taker to document this feedback and receive it graciously. Visual Aides can include posters, slideshows, etc.

Presentations are evaluated on a basis of: **clarity** of framing, **relevance** of content and **delivery**.

#### Week 5

## 8

### **Preliminary Results and Integration of Feedback**

Show your progress to your mentor and get feedback for moving forward.

**Week 7**

## 9

### **Pre-Review Mentor Feedback**

Show rough draft of presentation to your project mentor at least 3 days before presentation.

**Week 8**

## 10

### **Results Review**

7 minutes (you will be cut off) to go review Project Statement, Framing, Research Findings, however bulk of presentation should be on Methodology and Results.

Team will get feedback (7 minutes) from mentors and reviewers. Assign a note taker to document this feedback because you must integrate the feedback into your report. Visual aids can include posters, slideshows, etc. Evaluated based on **clarity** of framing, **relevance** of content and **delivery**.

**1. Final Project Goal Statement** Project Goal Statement has likely evolved over the quarter. The last iteration of your pitch should reflect a well-honed and clear problem definition.

**2. Background** Your sector papers synthesized, distilled to the key insights. Frame your problem using the 4 lenses of sustainability. This should be enough background in other words, no introductions of your client's country facing climate change!

**3. Methodology** If the first presentation was to say what you were going to do, here is where you tell the panel what you did and how you went about it. One of several methodologies you used may have been the Evaluative Matrix for your Technological or Prior Art Review. How you arrived at your criteria and weighted them would be part of your methodology. The table showing the best option goes in results...

**4. Results** These are the fruits of your labor, the answer to the question, the newest prototype(s.) Show and tell where appropriate! Any result is a good result.

**5. Recommendations** Looking at your results in light of the research you did. Next steps for you and/or client in regards to this project, does it go to D-Lab II? What questions remain or what new questions came up?

**Week 9**

# 11

## Final Product

Report must include:

- 1. Executive Summary:** 1 page that covers the whole project. Anyone should be able to read that and understand the whole study.
- 2. Introduction:** Finalized project statement, relevant background information (sectors literature review distilled down to the key insights, no general info that is unrelated to the project, we all know climate change is happening.)
- 3. Methodology:** What you did and how you went about it. Analytical tools and how you used them. Was it a Life Cycle Analysis?
- 4. Results and Discussion:** Results of whatever methodology was carried out and discussion that relates these results to the research you did.
- 5. Recommendations** for moving forward. Does the project live on in D-Lab 2? What are the next steps for your client?
- 6. References:** Cite sources thoroughly and consistently.
- 7. Appendices:** Photographs, maps, sketches, and any additional material that is relevant, but might interfere with the readability of your report. Not just a copy paste of sector papers, unless absolutely relevant.

Final papers are evaluated on a basis of: **relevance** of content, **clarity** of the writing (grammar, spelling, and coherence, tell the reader what you are going to say, say it, then tell the reader what you said!) **quality** of the work. The less work we have to do on a paper before sending it to a client or posting it online, the higher its marks!

**Week 11 On Monday by 12:00 Noon in D-Lab**