

Handout 1: Aguaje Fruit in Peru

Instructions:

Read the following prompt and respond to the questions.

About Aguaje Fruit Harvest

Aguaje (*Mauritia flexuosa*) is a non-timber forest product with sustainable management concerns and a complex socio-ecological system. This species is a dioecious palm whose fruit is harvested for human consumption in the northern Peruvian Amazon. Most *M. flexuosa* fruit are harvested by felling female trees (Smith 2015; Virapongse et al. 2017), though alternative, more sustainable, harvest methods using specialized climbing equipment have been developed (Manzi & Coomes 2009; Horn et al. 2012). Reports on sexual maturity of the palm differ, but range between 10 to 12 years (Smith 2015) or 10 to 15 years (IIAP 2006) in the wild, and 7 to 8 years in agroforestry settings (Delgado et al. 2007). After reaching maturity, the palm may continue to be productive for many decades, so the current harvest intervals and methods are likely both ecologically and economically unsustainable.

References

- Delgado, C., Couturier, G., & Mejia, K. (2007). *Mauritia flexuosa* (Arecaceae: Calamoideae), an Amazonian palm with cultivation purposes in Peru. *Fruits*, 62(3), 157-169.
- Instituto de Investigaciones de la Amazonia Peruana (IIAP). 2006. Aguaje: La maravillosa palmera de la Amazonia. Wurst Ediciones, Miraflores. 54pp.
- Manzi, M., & Coomes, O. T. (2009). Managing Amazonian palms for community use: a case of aguaje palm (*Mauritia flexuosa*) in Peru. *Forest ecology and management*, 257(2), 510-517.
- Smith, N. (2015). *Mauritia flexuosa*. In *Palms and People in the Amazon* (pp. 341-381). Springer, Cham.

Questions:

1. What terms or concepts do you not yet understand?
2. What do you think is the problem and what is causing the problem?
3. Who are the groups involved in the problem?
4. Who or what are the people and things impacted by this problem?
5. What other information do you want to know and how will that information help you understand this system?Handout

Handout 2: Information Needs Assessment

Use this handout to organize your information needs.

Category of Information	Specific Piece of Information	What will this be used for?	Where might you find this information?
1			
2			
3			
4			
5			
6			
7			
8			

Assignment 1: Case Study Exploration Homework

Instructions: Using your Handout 1 and Handout 2 worksheets as a guide, spend some time researching information on Aguaje at home and bring that information with you to class for discussion. Each student is expected to have at least 2 new pieces of information corresponding to the list generated during class discussion.

Handout 3: Introduction to Concept Mapping

Concept Mapping:

A concept map is a diagram that displays concepts and ideas, along with the ways they are connected or influence one another. To make a concept map, you need to have a purpose for it. In this assignment, your team will develop concept map whose purpose is to show what the sorts of information and ideas are provided from the Information Needs Assessment and how this information is connected.

Your concept map will look something like this:



Activity Instructions:

1. Using your post-it notes, starting by writing your desired vision for aguaje management. This is an anchor for the rest of your map. You can also frame this as a question if you're not ready to write out a specific objective.
2. Next, start writing pieces of information you've learned and noted in your Information Needs Assessment and start connecting the post-it notes with arrows explaining relationships
3. Lastly, add post-it notes for any information that is needed to fill in gaps.
4. Either take a picture of your concept map or draw it on the back of this handout as your Exit Ticket for class.

Assignment 2: Concept Map & Narrative

For this assignment you will need to turn in a copy of your concept map along with a narrative that references the map. Keep in mind the objective statement or research question you developed in class using Handout 3.

Concept Map

The type of concept maps we are building in this class are often called “systems maps” because they depict the components and interactions of a system. As a visual description of a system, a systems map describes a collection of actors and forces that work together to create and sustain a given socioenvironmental phenomenon. The system map shows the causal relationships among those actors and forces. To be included in your map:

1. Objective Statement or Research Question.
2. No more than 10 – 15 concepts (this is not a data dump – consider carefully what may be the most important characteristics)
3. Label all arrows on the maps so that the concept - arrow - concept triad forms a logical statement of the relationship

Narrative

A concept map is a visual story. In order to fully grasp the story (and in order to help you figure out what the story is), it is important to write a short narrative. This narrative should tell the story about the map, i.e. What is the answer to the main question that the map is designed to address? The narrative should be between half a page and a page in length.

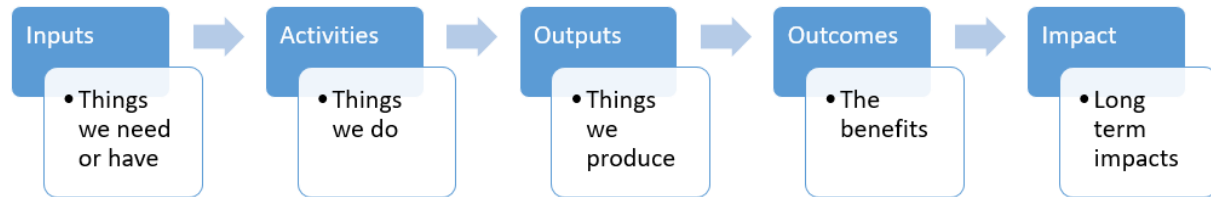
Evaluation Rubric: Integrated Concept Map and Narrative

Criterion - CM: Concept Map, - N: Narrative	0 – Missing	1 – Unacceptable, major errors	2 – Most components addressed, but missing some aspects	3 – Complete, but lacking complexity	4 – Outstanding
CM: Neat and Easy to Read					
CM: Connected concept and labeled arrows form meaningful and correct statements					
CM: Considers concepts from all relevant knowledge domains					
CM: No obvious missing connections					
N: Focuses on answering the main question					
N: Easy to follow; well written					
N: Consistent with the concept map					

Assignment 3: Results Chains and Recommendations

Results Chains:

One form of concept mapping is the Results Chain, which links what we have or need with activities we need to do and the expectant products, benefits, and long term impacts.



Instructions

Step 1:

Starting with your objective statement/research question as a guideline, identify a specific long term impact that can be connected to links and paths in your concept map.

Step 2:

Using a results chain, explain how an activity will create a long term impact in the context of your concept map and narrative.

Final Assignment

In a single document, please turn in the following:

- (1) Background/Introduction (including objective statement/research question)
- (2) Final Concept Map
- (3) Concept Map Narrative
- (4) Results Chain and Recommendations