Identifying Concepts of Sustainability through Participatory Mapping

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Participatory Mapping

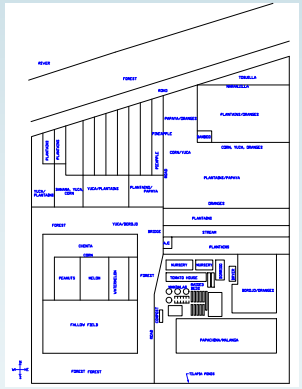
Theory

Over the past several decades participatory mapping has been recognized as a method for facilitating information exchange between researchers and local people. (1) Through successful collaboration, participatory mapping can create an equitable environment in which local knowledge is treated as the authority, and local people as the "resident experts". (1)(2)(3)

Sustainable agriculture is inherently a spatial concept. In order for us to gain a comprehensive understanding of the systems of sustainable agriculture employed by the students of Colegio Técnico Yachana (CTY), participatory mapping was a central component.

"Participatory mapping provides essential tools for guiding researchers understanding of scale, distance, direction, and location" (4).

We employed the Rapid Assessment Process (RAP) and participatory mapping because of their emphasis on incorporation and collaboration with community members.



Project Analysis

The Participatory Mapping strategy served to facilitate discussion and information exchange between our two groups. The mapping process illuminated the intimate knowledge students of CTY possessed about crop varieties, field organization, and crop cycles.

This intense collaboration was an essential element in identifying and understanding previously unrecognized aspects of their model of sustainable agriculture. Combined with our data gathered through other RAP methods, we were able to develop a comprehensive analysis of sustainability at CTY.

Understanding Sustainability: The Mapping Process

Familiarization

An initial tour of the agricultural fields with students allowed us to acquaint ourselves with both the students and the area.

The student guided tour helped to establish the attitude that they were the experts, and that we were there to listen and learn from them.

The process of mapping agricultural fields provided important contextual information about both the lives of the students and the complexity of sustainable agriculture systems.

Student Guided Tour

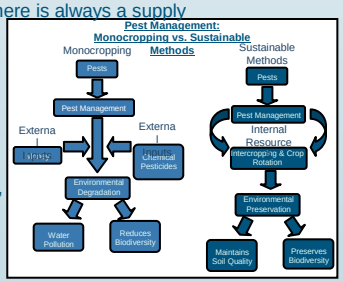
- CTY students and researchers divided into small groups or pairs in order to gain a broad and thorough understanding of area, as well as gather complementary data.
- This enabled researchers to do a comparative analysis of notes and discuss any perceived disagreements or misunderstandings.
- Students from CTY identified not only crop varieties, but crop uses, crop rotation cycles, and the complex relationships between certain crops.
- Handheld GPS units were employed to mark specific points of interest for future mapping and research

Crop Relationships

- *Intercropping*- planting specific types of crops together to provide natural protection against insect infestation
- *Sequential Planting*- planting and harvesting crops at different times so that there is always a supply

Field Rotation Cycles

- Alternated growing nitrogen depleting and nitrogen enriching crops
- Keeps soil viable, healthy, and productive



Crop Varity & Quantity

- Avoided monocropping- the practice of growing only one crop to sell for profit
- Grew a variety of crops to meet nutritional needs

Future Research

The dynamic nature of the sustainable agricultural systems at CTY provides an interesting basis for comparison in future years. Future research could undertake a comparative analysis of how the spatial patterns of the fields change over time. This analysis would help us understand the viability and success of fields over a prolonged time, contributing to an overall understanding of sustainable agriculture.

Assessment

- The process of mapping with students provided researchers with training and experience in participatory research and mapping techniques.
- Students from CTY and researchers actively discussed the outcome of the map, and made changes to improve it's accuracy.
- Together we discussed possible uses and benefits of the map for students of CTY.
  - *Teaching tool*- map could be used as a tool to teach students about field orientation, fallow fields, etc.
  - *Planning tool*- map could be used to plan where to plant new crops, what fields to rotate, what fields to leave fallow, etc.