

# Making a living: Agricultural Practices, Climate Change, and Cultural Change in Yucatec Maya Communities in Calakmul, Mexico

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Where thought meets action



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### Teaching:

- ~ Social and Cultural Anthropology
- ~ Cross-Cultural Women's and Gender Studies;
- ~ First Nations of Canada
- ~ Anthropological Theory
- ~ Anthropology of Latin America and the Caribbean

### Research Interests:

- ~ Anthropology of Development, Environment and Environmentalism
- ~ Gender and Feminist Studies
- ~ Mexico, Latin America,
- ~ Yucatec Maya, Indigenous Peoples



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# Presentation Content

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# Literature Review

- Climate change threatens livelihoods, ways of living, and well-being.
- Environmental anthropologists have made considerable efforts to document climate change as a cultural phenomenon (Dove, 2014).
  - Generally, they have only studied perceptions of change within the local environment, and largely ignored climate change discourses (Rudiak-Gould, 2011).
- Local environmental perceptions may syncretize with international climate change discourses to create entirely novel discourse (Crate, 2011).
- Considering politics and economics at the regional, national, and international levels may reveal how effects of climate change are patterned structurally by gender, racial constructs, socioeconomic class and etc. (Ribot, 2014).



# Literature Review (cont.)



- The *ejido 20 de Noviembre* is dominantly Yucatec Mayan – 90% in the 90's (Murphy 2003).
- They practice shifting cultivation with squash, corn and beans. (Redfield & Rojas 1934, Gleissman & Engles 2015).
- This traditional system is called *milpa*, to grow food in this manner is '*to make milpa*'.
- *Milpas* may also include other crops like tomatoes, chiles, sugar cane, and wild game.
- Other economic activities include: wood cutting, chicle extraction, honey production, animal husbandry (cattle, goats, and/or poultry), handicraft production, and wage labour (Murphy 2003).



# Research Question

- The *Milpa* (agricultural system), and many other productive activities - are critical components of a largely subsistence based economy in *20 de Noviembre*.
- Overtime, the reliance on wage labour has increased, locally and abroad, because of political and economic shifts (regional, national and global).
- Climate change is also a driver, and is likely to have a huge impact because of the *milpa* system is rainfed.
- **Purpose:** explore interrelated changes in climate and agricultural Practices, and the meaning and perceptions of these changes.
- Interpret data in the context of a larger research project on cultural and economic change by Dr. Murphy, with comparison to her previous fieldwork in 1996/97.



# Methods: Site

- Calakmul Biosphere Reserve is a large stretch of tropical forest, located in Campeche State, in the Yucatan peninsula of Mexico.
- Challenges:
  - Travel
  - Tropical climate
  - Mexican culture
  - Indigenous Mayan culture
  - Spanish language



# Methods: Language



## Spanish (1°)

- All research methods conducted in Spanish
- Form questions, listen and engage in dialogue

## Yucatec Maya (2°)

- Build relationships
- Solicit technical terms relevant to agriculture
- Few resources in Canada, had to gather materials and self teach using linguistic analysis





# Methods: Participant Observation

- REB approval for all methods
- Learning about culture by being physically present, and participating in daily life (as appropriate)
- Develops relationships and helps build trust so other methods can be applied (surveys and interviews)
- **Examples:**
  - Home stay for a week
  - Socializing – eg: attending a birthday party
  - *Milpa* visits, and machete work
  - Garden and fruit tree tour



# Methods: Surveys

- Survey created to:
  - Compare changes between the present, and the period of previous surveys (96/97)
  - Cover many topics: demographics, household organization, family size, economic activities, births and deaths and religious affiliation
  - Identify participants for interviews
  - Introduce me to community members in the context of my role as a researcher
- 5 surveys completed, decided to prioritize interviews and participant observation



# Methods: Interviews



- Semi-structured
- Topics: agricultural practices and changes, perceptions of environmental change, perceptions of climate change, demographic change, cultural change, Mayan language and education
- 14 interviews in total; some audio recorded, others recorded with written notes
- Some arranged beforehand, others impromptu



# Timeline (Aug 10<sup>th</sup> – Sep 5<sup>th</sup> )

## August

- 10-11 Travel to Quintana Roo, Mexico
- 12 Travel to site of Field Work, in Calakmul
- 13-14 Meet Contacts in Xpujil, 20 de Noviembre
- 15-22 Conduct Household Surveys, and Participant-observation
- 23-
- Sept. 3 Conduct Interviews, and continue Participant-observation
- 4 Travel to Mexico City
- 5 Return to Vancouver





# Data Analysis

- Field notes from 19 days of fieldwork (participant observation), surveys and recorded interviews
- Transcribe interviews and analyze (ongoing)
- Cross-analyze interviews and field notes for consistent themes
- Compare to previous work by Dr. Murphy from 1996/97





# Preliminary Results

- Participants have observed changes in the quantity (reduced) and temporal distribution of rainfall (later) over a period of about 4 years, and commented about changes in weather over the last 10 to 20 years.
- These changes are corroborated by meteorological data provided by the director of Calakmul Reserve.
- The shift in rains bring a suite of negative effects:
  - Reduced yields or total loss of *milpa* crops - primarily corn, squash and dry beans
  - A decline in all productive activities - reduced abundance of animals for hunting, diminished yield of honey because of lack of wildflowers, and fruit trees with significantly decreased harvest
- An experimental research station exists within the buffer zone of the reserve is currently tackling the following issues related to climate change:
  - Trialing new sowing dates, variety trials with different hybrids, and *criollo* (*landrace, heritage*) varieties



# Preliminary results (cont.)

- Rapid cultural and economic changes occur simultaneously with climate change, making it difficult to separate out changes related specifically to climate change.
- Greater economic diversification and adaptation of life strategies such as a reliance on wage labour, or other activities such as handicrafts and hosting tourists.
- Some children have left *20 de* in pursuit of work, and of those that remain on only a portion become *milperos*.



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# Thank you!

