



# Local perception and adaptive strategies to climate variability in the southeast of the Yucatan Peninsula, Mexico

Karla Diana Infante Ramírez (ECOSUR)

Ana Minerva Arce Ibarra (ECOSUR)

Anthony Charles (SMU)

Erin I. J. Estrada Lugo (ECOSUR)

International Conference  
Communities, Conservation & Livelihoods  
May 28th-30, 2018  
Halifax NS, Ca.

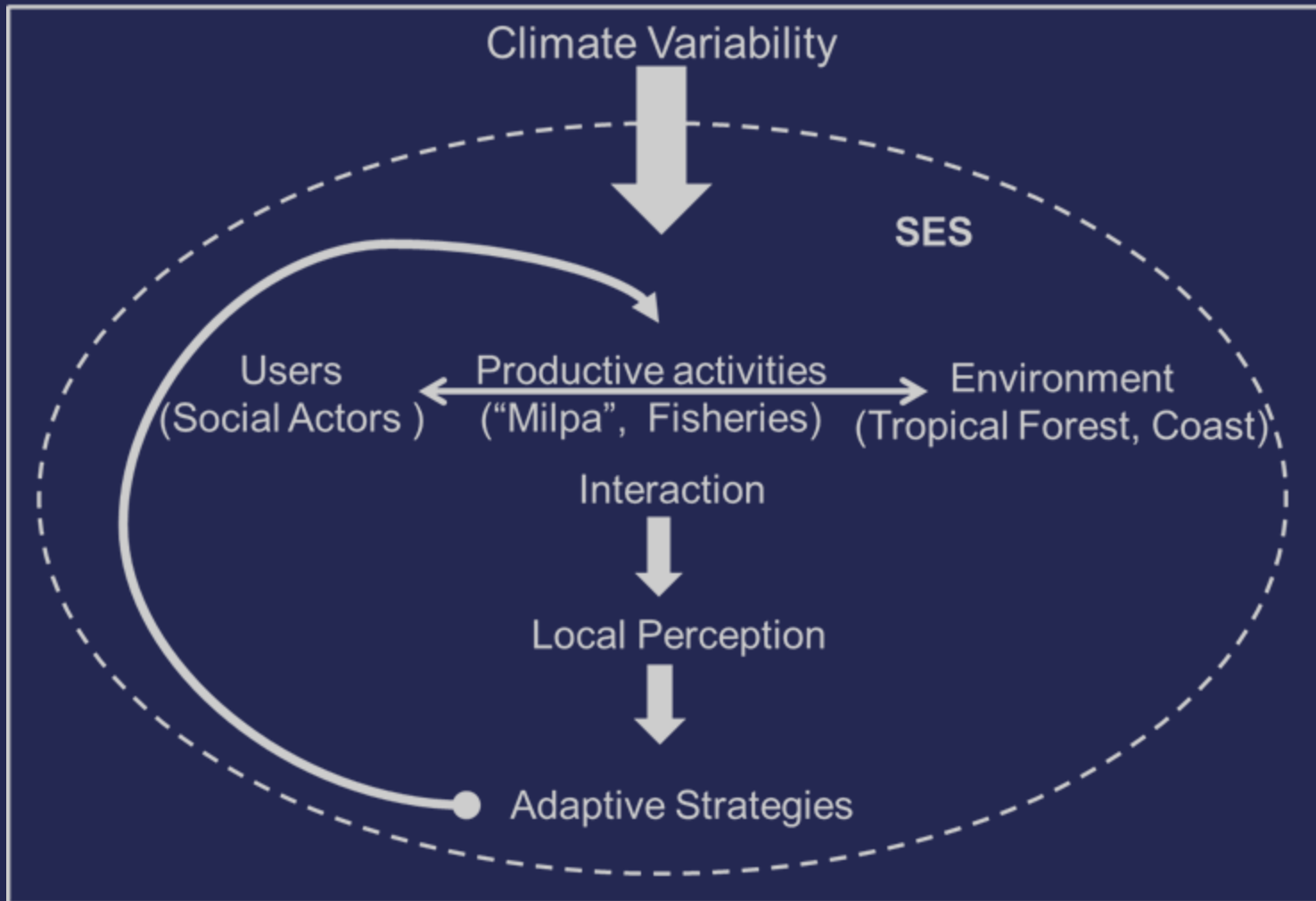
# Outline

- Introduction
- Study Approach
- Main Objective and research question
- Methods
  - Study Site
- Results
  - Xook Kiín
  - Adaptive strategies in Maya area
  - Adaptive strategies in Coast area
- An uncertain future
- Conclusion

# Introducción

- The Yucatan Peninsula is located in a zone of transition between dry and humid climates and is subject to the meteorological phenomena like “Nortes”, tropical waves and cyclones. these phenomena can intensify in frequency and intensity as a result of the warming of the oceanic surface (Orellana et al., 2009; Carrillo, 2013).
- The activities of the primary sector such as agriculture and fisheries are considered extremely vulnerable in less industrialized countries because they are doubly exposed, on the one hand to strong socio-economic changes within the processes of economic globalization and on the other hand they are also highly sensitive to the climatic variations.
- In the literature on climate change, local inequality, vulnerability and poverty have become the main concern of the scientific community, because they influence the adaptation processes in rural communities, as well as in the implementation of public policies aimed at adaptation (Sánchez-Cortes and Lazos, 2011; Mosberg and Eriksen, 2015)

# Study approach: Social-Ecological System Analysis

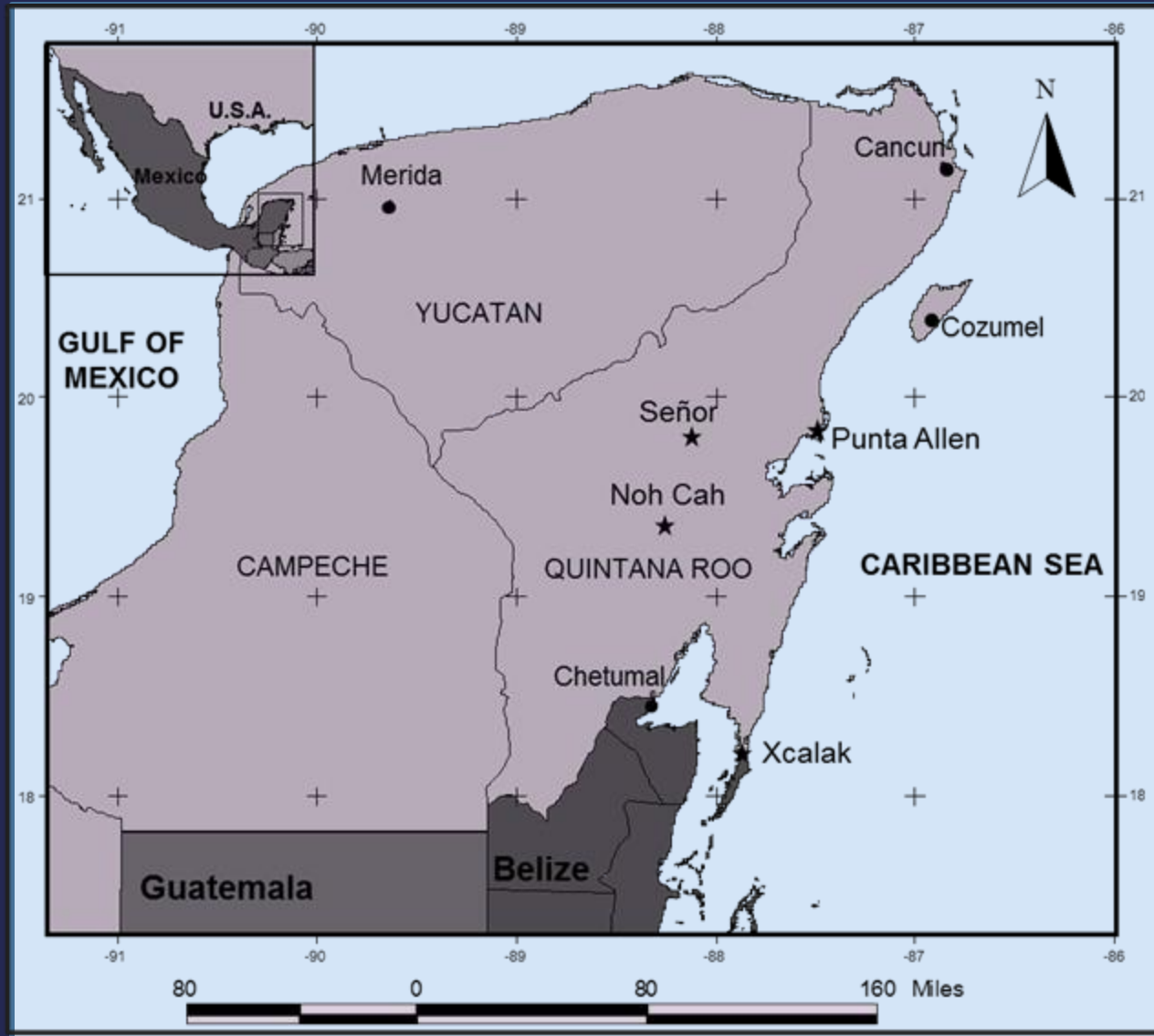


SES- inclusive approach of social ecological systems will be used for the analysis.

# Main objective and research question

- Analyze the **local perception** and **adaptive strategies** to climate variability in the **Mayan and coastal areas** of Quintana Roo state, Mexico.
  - How rural communities understand climate variability and what their **responses or adaptive strategies** in the state of Quintana Roo systems?

# Study Site



# Results

## Local Perception in Maya zone (Noh Cah y Señor) “Xook k’iin” (or “las Cabañuelas”)

o An

In th

Phas

Phas

Phas

Indic

o gra

o Th

rai



,  
sects

# Adaptive strategies in Mayan zone

- Farmers

- Changes in the schedule agricultural
- 2 periods of sowing 2 varieties of corn
- Different sowing, start in June-August
- Changes in working hours of the field 6-12 to 4-10
- Migration
- Other jobs
  - "Wait for the bad weather to pass"



# Adaptive strategies in Coast Zone

- Fisherman (lobster)
  - Change schedule to fishing
  - Flake Fishing
  - **Internal closures**
  - Tourism
  - Other jobs
  - Migration
    - Punta Allen
    - **Hurricane Gilbert** (1988) -Saving Fund -  
Changes in administration -Reduction of  
partners

# An uncertain future

- There is no communication between institutions
- The language
- Lack of integrated research at local level
  - It is necessary to understand that adaptation strategies in a determined space involve a number of decisions from different agents such as individuals, civil society, local governments, regional and national, as well as international agencies.

# Conclusions

- In the four SES it is perceived that the **temperature** is **increasing** and the **precipitation** is **decreasing** in the region. However, the affects related to these changes are different because of the differences in their **livelihoods**.
- In the SES of the Maya zone the changes in the climatic variability not only affects them in their **methods** of **subsistence**, but also **culturally** due to the **loss of traditional knowledge**.

# Conclusions

- In the coastal systems the principal effect of the perceived changes is in the fisheries and tourism. In the community of Punta Allen the importance of **social organization** is recognized such as the strength principals for confronting extreme climatic events.
- We consider that to **socialize** the **information** generated by the **experts** in climate change it is fundamental to **improve** the **adaptive capacity**. An informed community has more opportunity to act than an uninformed one and in this study the four communities showed interest in the information about the changes in the patterns of climatic variability.



Punta Allen Feb. 2015



Xcalak May. 2015



X-Maben April 2015



Noh Cah May 2015

# Acknowledgements

We are grateful to the people and local authorities of the four communities for agreeing to participate in this investigation. To the Social Sciences and Humanities Research Council of Canada (SSHRC) for the financial grants through the Community Conservation Research Network (CCRN) St. Mary's University, Halifax, Canada. We are also grateful for all the support of ECOSUR and CONACyT.



In Memory of Adán Enrique Gómez González  
(1980-2018)