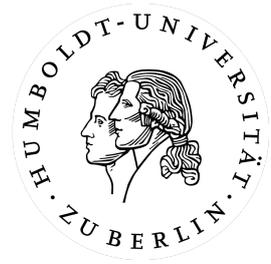


HUMBOLDT-UNIVERSITÄT ZU BERLIN



**HUMBOLDT-UNIVERSITÄT ZU BERLIN**  
**Faculty of Life Sciences**  
**Albrecht Daniel Thaer-Institute of Agricultural and Horticultural Sciences**

Ecological design in the Mexican rainforest under uncertainty and surprise:  
A case study of the Flor de Marqués Ejido as a public experiment according to Gross (2010).

Thesis in the study program: M.Sc. Integrated Natural Resource Management  
Submitted by: Manuel Arredondo Prado

1st Examiner (Supervisor): Prof. Dr. Tobias Krüger  
Division of or Institution: IRI THESys / Humboldt-Universität zu Berlin  
2nd Examiner: Dr. Dimitrios Zikos  
Division of or Institution: Fachgebiet Ressourcenökonomie /  
Humboldt- Universität zu Berlin

Berlin, September 26th 2017

## **1. Introduction**

The management of uncertainty is an activity seen in every day decision making. For policymakers it involves a task to list possible events and be prepared for the unexpected. (Pielke, 2007, Gross 2010). The task of scientist is limited to advice policymakers that determine courses of action implemented in communities. Public experiments are progressive models of knowledge creation that exit the laboratories and try to merge science, policymaking and the general public, as the need for intervention as Social-Ecological systems become more uncertain and require policy interventions that attain the proposed results (Ostrom, 2007, Gibbons et al.,1994, Gross, 2010). The work of Matthias Gross (2010) is a theoretical effort that explores the role of uncertainty and unexpected events as a possible source of knowledge embedded in public experiments.

Ecological conservation and restoration in the Lacandon rainforest in southern Mexico are activities embedded in an uncertain context. Implemented actions try to attain beneficial outcomes for both ecosystems and local economies, as previous agricultural activities have destroyed a large part of the vegetation coverage and a vast portion of the biodiversity in the region, these interventions are required as the deforestation continues to rise. Alternative economical activities such as creation of eco-turistic ventures owned by local communities, create economic revenue for its inhabitants while it enhances the conservation of the rainforest. The incursion of communities into new economical activities is uncharted territory that have been the central approach for NGOs focused on conservation such as Natura y Ecosistemas Mexicanos A.C. (NEM) and their work with the Flor de Marqués (FM) in southern México.

The objective of this present analysis is to further operationalize the theoretical work of Gross (2010) by performing a case analysis in the Flor de Marqués ejido. This objective is attained by evaluating available information of the region, using both secondary and primary research, with attributes of public experiments and ignorance and surprise cycle, two core concepts introduced by Gross (2010). These attributes have been compiled from the publication: “Ignorance and Surprise” (Ibid). To determine if the FM case can be considered as a public experiment that follows an alternative pathway of knowledge creation by absorbing surprise events.

The practical research objective is to provide relevant information to the actors involved in the FM case. The analysis has shown relevant information related to the uncertainty management practices implemented between 2008 and 2017 by the FM community and NEM, this investigation could serve as background to adaptive internal strategies. Additionally, relevant information is identified related to the external communication strategy implemented by NEM through policy papers.

The present analysis revisits this case with the following research questions:

Can the Flor de Marqués ejido case be considered to be a public experiment in ecological restoration as described by Gross (2010)?

Did the Flor de Marqués case entail surprises for the actors involved? Followed by the possible production of extended knowledge?

## 7. Summary

The research approach used in the present study is believed to be incorrect. A list of attributes of a public experiment seen as isolated fractions do not portray the overall purpose of the concept envisioned by Gross (2010). For the same reason, surprising events left alone carry little information and could be implemented to observe isolated events of knowledge creation. Therefore, section 5.3 *Observed surprises and resulting learning pathways in the Flor de Marqués ejido: jungle landmarks with ecotourism value* carry little value when placed outside of the context of its creation. I.e., previous and later experimentation cycles. This became evident as the information gathered during the fieldwork was analyzed, which is framed on a history-telling scheme, showed relationships between previously acquired knowledge and the appearance of further surprises in the participants.

It is believed that the core attribute of public experimentation is the recursive element of experimentation and learning. Therefore an alternative structure of public experimentation should not observe the attributes presented in this thesis in the same level, as it is also done in this study. Instead, a different arrangement is suggested.

Local publics as part of a decision making authority, heterogeneous groups inclusion, and a procedural entity that fosters regulation and cooperation **are the context** in which the experimental activity takes place. Openness to surprises, acknowledgment of Nonknowledge, and Active interventions are **attributes of an experimental practice** that follows the ignorance and surprise cycle. The recursive element is only achieved by various experimental cycles.

Therefore the recursive-learning element demands an analysis of experimentation cycles seen in a historical context in order to yield valuable information of a case analysis if it can be seen as a public experiment. And the other attributes should then evaluate. Thus the greatest finding of this study is that a recursive representation can be achieved by selecting surprising events from a historical contexts, which can be later show links between experimental cycles. Therefore, the advances made in section 5.4.2 *Recursive learning practices of heterogeneous groups* encompass the core essence of a public experiment. Nevertheless the structure of the present study could not be reassembled in time, despite of the availability of information achieved in the fieldwork. It is hoped that

future research can use the methodologies explained in this study to obtain historical surprises events and link them to recursive learning patterns.