

RCN CONFERENCE ON PANAMERICAN BIOFUEL AND BIOENERGY SUSTAINABILITY

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GLOBAL AND LOCAL PERSPECTIVES ON THE JATROPHA PLANTATIONS
FOR BIODIESEL IN SUCOPO, YUCATAN

MEXICAN CASE STUDY FOR PEER, PIRE and IAI PROJECTS



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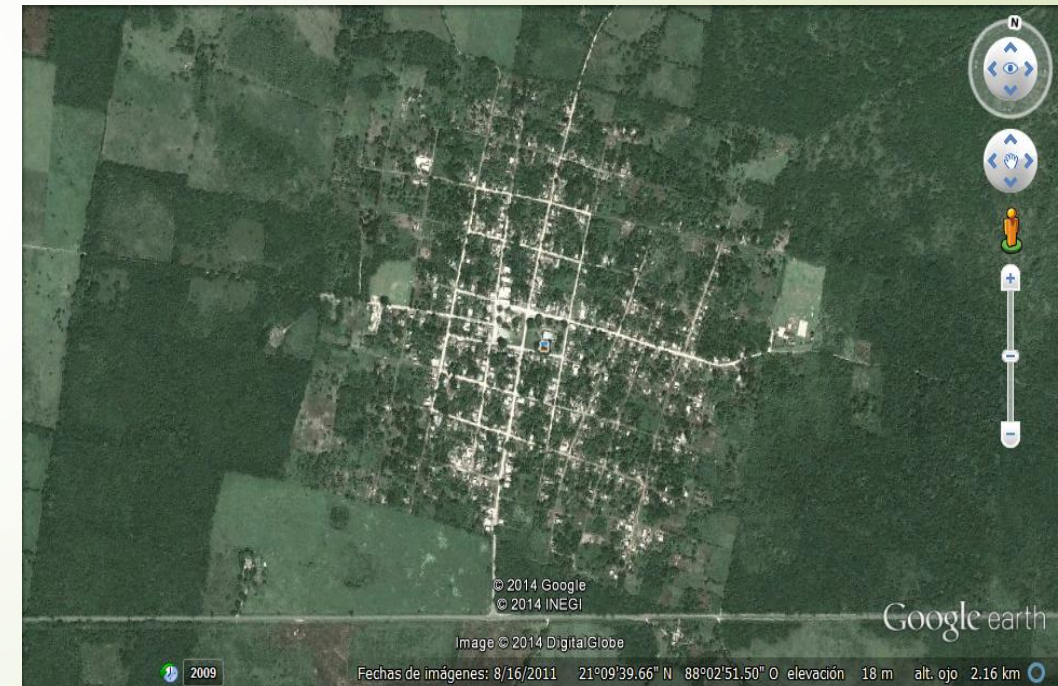
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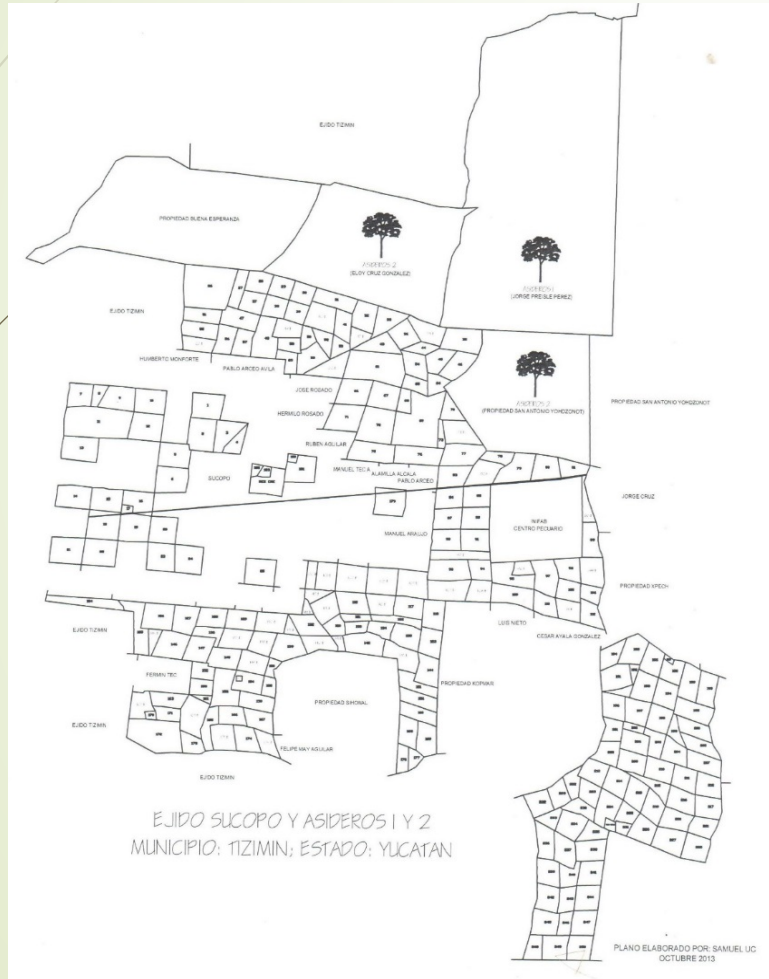
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LOCALIZATION OF JATROPHA PLANTATIONS

SUCOPO, TIZIMIN, YUCATAN, MEXICO



MAP OF SUCOPO`S EJIDO, AND THE JATROPHA PLANTATIONS



OBJECTIVE

ANALYZE LOCAL AND GLOBAL PERSPECTIVES ON:

1) Environment and ecosystem services

What do people get from the environment and what does it mean to them?

Land ownership, access to land, farming practices, crops, forests, wild animals, water, pests,

2) How sustainability is understood

What is most important to people?

Keeping the forest, having a job?

3) What socioeconomic impacts did the jatropha plantations have?

METHODS

- Selection of control and treatment villages
- Qualitative in-depth interviews with around 160 households in the región, (100 in Sucopo)
- Life histories with key informants
- Interviews with local authorities
- Newspaper reports
- Public documents with information about the company (such as the Roundtable Sustainable Biofuels certificate)



ECOSYSTEM CONTEXT

- **Geology:** limestone plateau with no rivers in the north and very little surface water, sinkholes or *cenotes* are widespread
- **Soil:** very thin, stony and nutrient-deficient, mechanized agriculture very difficult
- **Climate:** Mostly warm, sub-humid
- Average annual temperature: **26°C**,
- Average rainfall: **1,100 mm**, concentrated in the summer



ECOSYSTEM

Vegetation and land use

- **Natural vegetación:** Medium deciduous tropical forest
- **Present predominant land use:** Cattle ranching, small patches of traditional agriculture (maize, beans and squash), citrus and papaya plantations



LAND USE CHANGE SLASH AND BURN (*MILPA*) AGRICULTURE AND EXTENSIVE CATTLE RANCHING



SOCIO-ECONOMIC CONTEXT

- Maya peasant village
- Population in 2010: 1,517 (around 417 families)
- Languages: Maya and Spanish
- Education: 6 years
- Health services: Village health center
- **Economic activities:** agriculture, very small businesses
migration to Riviera Maya to work in construction industry. Subject to boom and bust cycles.
- **women** tend to stay at home, some work as farm laborers
- **Income:** Between \$40 and 100 US dollars a week

SOCIO-ECONOMIC SUBTEAM ISSUES

- Land ownership, access to land and land use patterns
- Government policy on biofuels
- Economic activities
- Traditional agriculture and subsistence activities
- Values related to ecosystem services,
- Household incomes
- Employment opportunities and work conditions in and near the village
- Gender relations

VILLAGERS FROM SUCOPO



MEXICAN BIOFUEL POLICY

- 2008 Bioenergy Law to promote investment in biofuels

1. Policy to reduce GHG emissions
2. Create jobs and boost rural development
3. Increase long term energy security



- Large number of possible feedstocks were identified for different regions. Maize was prohibited as a feedstock unless Mexico produced a surplus.

- Jatropha selected for agriculturally marginal areas such as Yucatan

Considered a poor man's crop that will grow without irrigation, fertilizers and pesticides

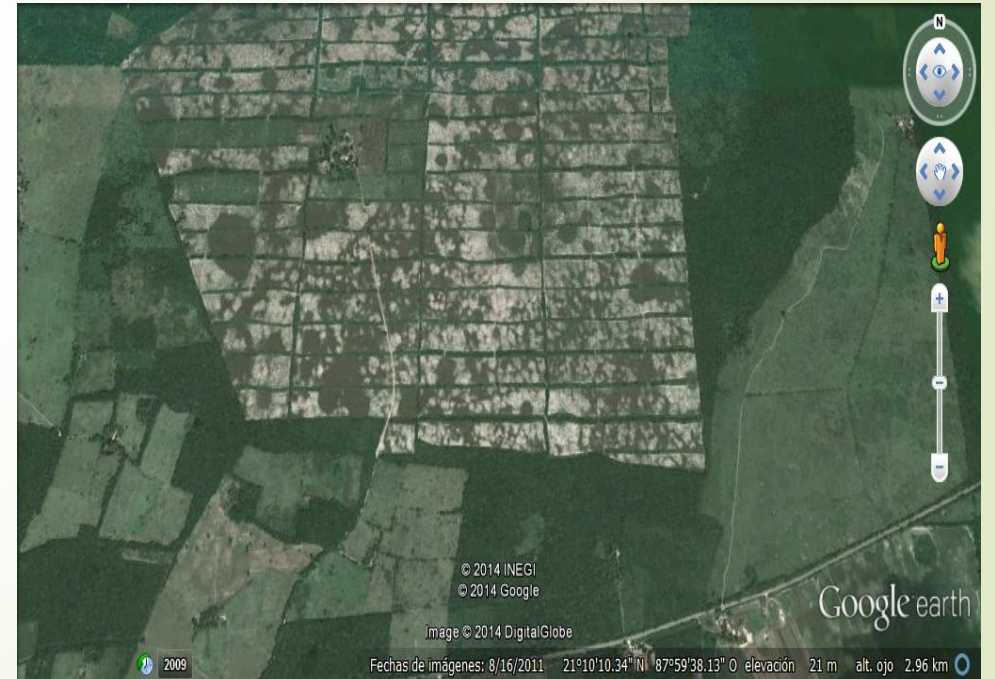
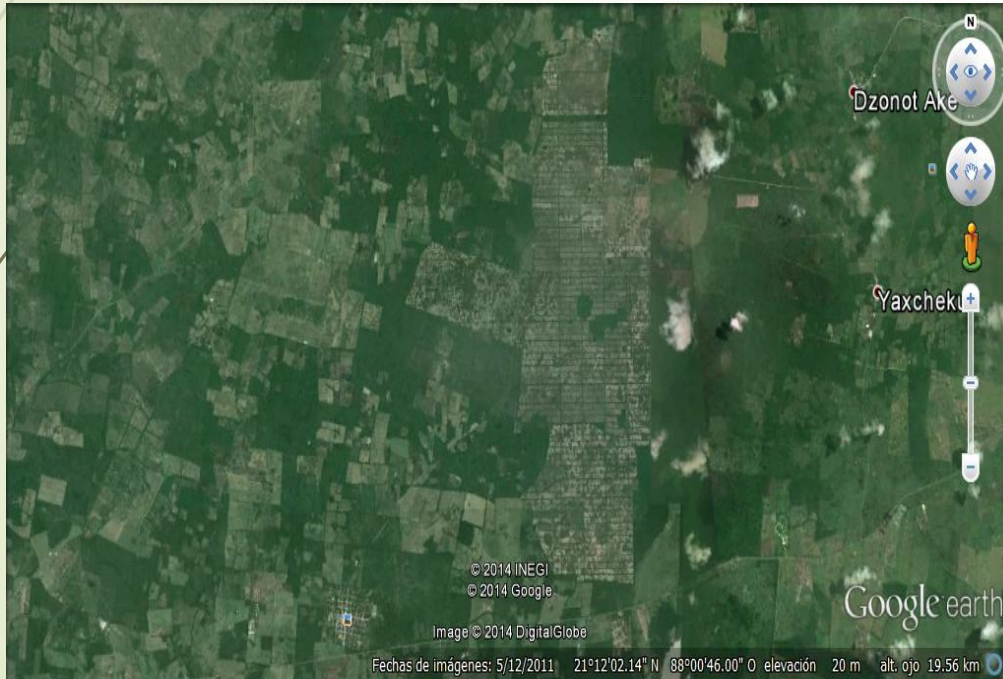
- Although some varieties are native to Mexico and it was used in Sucopo for medicinal purposes, it is a **wild plant, that has never been domesticated**



GLOBAL CLEAN ENERGY HOLDINGS INC.

- In 2008 American company Global Clean Energy Holdings Inc.(GCE) created a Mexican subsidiary in association with Mexican **investors** and bought some 6,000 hectares of private land, near Sucopo´s ejido.
- Permission granted to plant jatropha on about half of the land by claiming that the land was "abandoned cattle ranches"
- Jatropha classified as a tree, so company got subsidies from Mexican Forestry Commission (CONAFOR) for the establishment stage and subsidies from the Min. of Agriculture (SAGARPA) for equipment and chemical inputs.
- It hired 500-600 people and promised the villagers that they would have long term, sustainable jobs (15 to 30 years) working on the plantations

JATROPHA PLANTATIONS



DEVELOPMENT OF JATROPHA PROJECT

- 500-600 people employed from Sucopo and around
- Pay was 195% of minimum wage, benefits according to the law
- Program of free breakfasts for school children and support for local baseball team
- During 3-4 years things seemed to be going well but strict confidentiality about the companies' activities
- Observations that jatropha leaves were turning yellow and falling off
- Aerial spraying and speculation about disease
- Poor yields, not even 1 ton per hectare
- End of 2012 drastic reduction in size of operation, but not total closure of company
- 500 people laid off and told the company was restructuring

RESULTS

LOCAL PERSPECTIVES

- Environment gives Sucopo people a strong sense of **identity**
- Villagers' cosmovision: natural resources belong to the Gods, not to men, permission has to be sought to use them, through rituals and correct behavior
- Understanding exists that natural resources and ecosystem services are essential for production of crops, hunting wild animals and the production of flowers so their bees can produce honey.
- Recreation and interest in ecotourism for the future.
- Understanding that the environment is necessary for life but modernization, globalisation and more change have undermined the traditional self sufficient way of life so sustainability now means having a job and the ability to earn a decent wage.

RESULTS

LOCAL PERSPECTIVES



- Almost no one complained about GCE
- No changes in land ownership or quality and quantity of water
- Everyone appreciated having a local source of employment that paid better than any other company
- BUT huge disappointment when the company laid off almost all its workers. What happened to the sustainable jobs for 30 years?
- Only after long questioning, did the bee keepers complain that **old forest (30 to 50 year old trees)** had in fact been cut down for the plantations, leaving the wild animals and particularly the bees without their natural habitat and food sources.
- Animals became pests and many bees were killed by aerial spraying of pesticides.

LAND USE TRANSFORMATION FROM THE GLOBAL PERSPECTIVE

Written into the Roundtable Sustainable Biofuels certificate (Nov. 2012) and published in the newspapers



LAND USE TRANSFORMATION ON THE GROUND, REAL CONSEQUENCES





LACK OF TRANSPARENCY IN THE GLOBAL PERSPECTIVE

➤ RHETORIC

- Full compliance with the Roundtable Sustainable Biofuel criteria
- Helping the environment and the local people to be more sustainable

➤ PRACTICE

- No quantification of subsidies
- No transparency or quantification of agricultural practices (especially chemical inputs)
- No transparency about investors
- No transparency about environmental permits to change the land use
- No accountability to local people

PRELIMINARY CONCLUSIONS

- The jatropha plantations project appears to build on historical systems of resource extraction in the región such as henequén in which cheap local labor is used to produce an export, mostly benefitting large land owners and consumers in a foreign country and creating an asymmetric dependency between the local and global.
- Natural capital was reduced by the jatropha plantations because of deforestation of the secondary vegetation, negatively affecting subsistence farmers' capacity to grow their own food and produce honey for sale.
- The jobs that were supposed to replace subsistence agricultura are no longer locally available.
- Sucopo's peasants find themselves caught up in the unenviable situation of seeing both their sources of livelihood (formal and informal) becoming increasingly unstable and unsustainable



MUCHAS GRACIAS!

