WEBINAR

LESSONS FROM LATIN AMERICA:
How Can Smallholder Agroforestry Boost Climate Resilience?

WEDNESDAY, MAY 29, 2024 • 9-10AM EDT/1-2PM GMT

MODERATED BY MARK CHANDLER
HEIFER INTERNATIONAL
Agroecology and Participatory Action Research to Support Smallholder Farmers in the Tropics

V. Ernesto Méndez
Institute for Agroecology (IFA)
May 2024
Seeding Just and Sustainable Food Systems

Through a program of research, learning and action, the Institute is seeding transformations to regenerate the environment, cool the planet and provide healthy food for all. Join us in the movement to create more just and sustainable food systems.

Learn more about the Institute
Learn more about Agroecology

https://www.uvm.edu/instituteforagroecology
Transformative agroecology

An approach to agriculture and food that seeks to achieve ecologically sound and socially just food systems, by:

1) Better understanding the multiple dimensions and interactions in our food systems

2) Integrating social and natural sciences with local and Indigenous knowledge, through ecological, sociocultural, economic, and political processes.
Figure 1: HLPE's 13 Principles of Agroecology. Reproduced from Anderson & Bruil (2021).
Transdisciplinarity: Valuing Diverse Knowledge Systems

Participatory Action Research (PAR)

“Doing research with people, for people”

Source: Caswell et al. (2021)
Agroforestry for Smallholder Resilience

Figure source: https://growahead.org/
The Coffee Value Chain
Climate Impacts on the Coffee Value Chain

- Migration
- Lower Yields
- Food insecurity
- Pests & Diseases

Price instability

Higher energy costs

Supply instability

Fluctuating cup quality
Main Climate Change Effects Reported by Coffee Farmers in 2015

[Diagram showing the percentage of farmers experiencing drought, roya, and food insecurity in Honduras (n=61), Nicaragua (n=70), and Haiti (n=71).]
Agroecological Practices for Resilient Coffee Systems

Live barriers for soil erosion

Vegetation cover between coffee rows

Diverse agroforestry systems
Assessing Diversification Strategies in Smallholder Coffee Systems of Mesoamérica (2017–)

Funded by:
General objective of the project

Analyze how agricultural diversification affects smallholder coffee farmers’ food security, climate change resilience, and gender equity

Agroecology Principles: Biodiversity, synergy, economic diversification, Co-creation of knowledge, Social values and diets
Highlands (Sierra Madre)
Funded in 1994
663 members in 2017 (211 women)
Buffer zone of the National Park El Triunfo
“Nadie sabe todo, todos sabemos algo”
2do INTERCAMBIO de Aprendizajes

12-16 Agosto 2019

MÉXICO NICARAGUA

Intercambio entre cooperativas, investigadores/as, técnico/as, estudiantes, y organizaciones sobre la...

DIVERSIFICACIÓN EN LOS CAFETALES DE MEXICO-MESOAMERICA
-Chiapas, Mexico-
CALENDARIO AGRÍCOLA

- DICIEMBRE
  - Cosach de café
  - Limpiar con cebolla
  - Lavar maíz
  - Maíz en julio
- ENERO
  - Cosach de café
  - Limpiar con cebolla
  - Lavar maíz
  - Maíz en julio
- FEBRERO
  - Cosach de café
  - Limpiar con cebolla
  - Lavar maíz
  - Maíz en julio
- MARZO
  - Cosach de café
  - Limpiar con cebolla
  - Lavar maíz
  - Maíz en julio
- ABRIL
  - Cosach de café
  - Limpiar con cebolla
  - Lavar maíz
  - Maíz en julio
- MAYO
  - Cosach de café
  - Limpiar con cebolla
  - Lavar maíz
  - Maíz en julio
- JUNIO
  - Cosach de café
  - Limpiar con cebolla
  - Lavar maíz
  - Maíz en julio
- JULIO
  - Cosach de café
  - Limpiar con cebolla
  - Lavar maíz
  - Maíz en julio
- AGOSTO
  - Cosach de café
  - Limpiar con cebolla
  - Lavar maíz
  - Maíz en julio
- SEPTIEMBRE
  - Cosach de café
  - Limpiar con cebolla
  - Lavar maíz
  - Maíz en julio
- OCTUBRE
  - Cosach de café
  - Limpiar con cebolla
  - Lavar maíz
  - Maíz en julio
- NOVIEMBRE
  - Cosach de café
  - Limpiar con cebolla
  - Lavar maíz
  - Maíz en julio
Diversification Included in the Cooperative’s Strategic Plan

Photos: Janica Anderzen
# Actions to Support Smallholder Coffee Farmers Across the Chain

<table>
<thead>
<tr>
<th>Actions for the Industry</th>
<th>Actions for International Development Actors</th>
<th>Actions for Researchers</th>
<th>Actions for Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Recognize the links between healthy communities, healthy families and a healthy supply chain</td>
<td>▪ Differentiate interventions (options by context)</td>
<td>PAR – ▪ Engage in processes in partnership with farmers, NGOs &amp; industry</td>
<td>▪ Assess bandwidth</td>
</tr>
<tr>
<td>▪ Build partnerships that will last (both with funders &amp; beneficiaries)</td>
<td>▪ Identify appropriate tools/techniques for farmer participation</td>
<td>▪ Follow cycles of jointly analyzing results and determining next steps</td>
<td>▪ Assert agency</td>
</tr>
<tr>
<td>▪ Observe what is emerging and be ready to adapt</td>
<td>▪ Seek partners who provide ongoing and appropriate support (commit to both short and long-term benefits)</td>
<td></td>
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</tbody>
</table>
Thank You
Muchas Gracias !!!
Merci Beaucoup
Case Study: Guatemala’s Green Business Belt

Luisa Fernanda Tabín
Project Manager
Guatemalan Context
GBB MODEL
Agroforestry Systems for Cardamom value chains and other spices

1. SMALL FARMERS PRODUCTION
   - Caring for the land
   - Women's empowerment
   - Heifer Laboratories
   - Heifer Impact Capital

2. FARMER OWNED AGRIBUSINESS
   - Seeds
   - Pesticides
   - Fertilizers
   - Technical support

3. MERCHANTS AND ACCESS TO CAPITAL
   - Local Market
   - World Market

4. PWI: POWER WATER & INTERNET
Developing an Adaptation Equivalency Index

- Base line: 48 communities
  - Socio-economic data
  - Environmental data
  - Adaptation practices
  - Climate change knowledge
  - Status of value chain
Key Findings

- Droughts
- Diversification
- Technical management
- Knowledge
- Water management
- Gender participation
- Government assistance
- Financial access
## Developing the AEI

### Actors
- Farmers, experts, private sector, public sector and academy

### Definition
- A tool used in the assessment of vulnerability and adaptation to climate change in natural and human systems.
- It is based on the concept that different systems have different adaptive capacities to climate change and therefore require different levels of adaptation efforts.

### Construction of the tool
- After the review, interviews and meetings between consultants and various other actors, a tool was created to be able to generate the framework.

\[
IEA_{total} = \frac{(IEA_1 + IEA_2 + IEA_3 + IEA_4 + IEA_5)}{5}
\]
Participatory Workshops
## Community Results

### Cacao

<table>
<thead>
<tr>
<th>VARIABLES</th>
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<tr>
<td>Water Management</td>
<td>0.37</td>
<td>BAJA</td>
</tr>
<tr>
<td>Use of resilient varieties</td>
<td>0.42</td>
<td>MEDIA</td>
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<tr>
<td>Diversification for adaptation</td>
<td>0.64</td>
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<tr>
<td>Processing</td>
<td>0.56</td>
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### Cardamomo

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### Pimenta Gorda

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<tr>
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<td>MEDIA</td>
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**Diagram:**
- 1. Water Management
- 2. Use of Resilient Varieties
- 3. Diversification for adaptation
- 4. Processing
- 5. Marketing

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**Diagram:**
- 1. Water Management
- 2. Use of Resilient Varieties
- 3. Diversification for adaptation
- 4. Processing
- 5. Comercialización

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**Diagram:**
- 1. Water Management
- 2. Use of Resilient Varieties
- 3. Diversification for adaptation
- 4. Processing
- 3. Diversification for adaptation
Lessons Learned

• Improving resilience through collaborative and focused action.

• Need for *increased training and collaboration* among actors at all levels to share knowledge and resources.

• These results should be seen as a starting point for a *process of continuous improvement* and not as an end in themselves.
Thank you!

Contact:

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