Assessing the Farming Landscape for Agroecology Education and Climate Change Adaptation in Rural Malawi

Darren Bardati
Bishop’s University
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MALAWI: The "warm heart of Africa"

- Poorest country in the world
- Population = 16 Million
- 1/100 size of Canada
- GDP per capita = $300/year
- Low life expectancy
- High infant mortality
- HIV/AIDS
- Malaria
October 16th is World Food Day and this year’s theme is “Climate is changing. Food and agriculture must too,” …farmers are facing higher temperatures, increased frequency of extreme weather events, and changing rainfall patterns. Climate change is expected to lead to declining crop productivity and threats to food security. Maize productivity is projected to decrease by 3.8 percent, based on global climate model predictions. Adapting to these changes by investing in and adopting innovative farming methods will be critical to farmers’ livelihoods and their ability to meet the needs of growing communities, according to the U.N. Food and Agriculture Organization (FAO).

Dry, degraded landscape
Transformative Praxis Malawi

A Project of Transformative Praxis

Transformative Praxis Malawi

Theory into Practice towards Social Justice
Education in Action

Cooperatively Creating Emancipatory Curriculum
Step 1: Mapping the boundaries of the 90-hectare property
Chief Bwanali and Marcello determining the location of the boundary, on a **cold** June day!
Step 2: Rapid assessment of farming landscape for vulnerability to drought

Step 3: Interviews with key community leaders – response capacity
TOOLKIT FOR THE DESIGN, MANAGEMENT AND ASSESSMENT OF RESILIENT FARMING SYSTEMS

Developed by Miguel Altieri and his team (Univ of California, Berkeley), applied in developing countries

Toolkit is used to:

• **Conduct** rapid agroecological assessment of farms and their levels of vulnerability

• **Initiate** a process of conversion to enhance response capacity and improve resiliency

• **Monitor** the trajectory of the farms under conversion after climatic events such as rains storms and droughts
Landscape Resilience and Vulnerability to Climate Change


Capacity of Local Farmers to Adapt to Climate Change (especially drought)

Source:
Based on:
1. Visual assessment of the Transformative Praxis Malawi (TPM) landscape (90 hectares) and surrounding farming plots
2. Interviews with selected community leaders

Performed by: Dr. Darren Bardati and Marcello Glo (research assistant) on June 13 to 17, 2016.
Landscape Resilience and Vulnerability to Drought
<table>
<thead>
<tr>
<th>Color</th>
<th>Situation</th>
<th>Action</th>
<th>Numerical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>Low vulnerability or high resilience</td>
<td>Maintain the level of management / conservation (Vigilance)</td>
<td>5</td>
</tr>
<tr>
<td>Yellow</td>
<td>Medium vulnerability</td>
<td>Must do something to improve (Caution)</td>
<td>3 - 4</td>
</tr>
<tr>
<td>Red</td>
<td>High vulnerability</td>
<td>Must do much to improve (Risk)</td>
<td>1 - 2</td>
</tr>
</tbody>
</table>

**What happens if the farm stays in Red?**
- Risk of high damage

**How to transition from Red to Yellow?**
- Start implementing agroecological practices (medium damage)

**How to transition from Yellow to Green?**
- Achieve complete agroecological design (low damage)
Capacity of Local Farmers to Adapt to Drought

- Living Fences and Windbreaks
- Crop Diversity
- Crop Rotation
- Mulching
- Make Compost
- Maintain Soil Cover (Reduce Burning Residues)
- Erosion Control
- Water Conservation Techniques
- Independence From External Inputs
- Saving Seeds
- Animal Forage
- % of Food Produced On the Farm
Interviews: Key Community Leaders

• “in past 10 years, the changes have been drastic”
• “in the past, we didn’t need fertilizers, soils used to be richer”
• “it’s hard for Malawians to adapt because of our dependency on Maize and the fertilizers”
• “I used the play in the river in June, now the river is dry”
Where the river used to flow.
USING THE RESULTS
by Malawian collaborators

• To communicate how to improve land management practices

• To build curriculum – raising literacy, breaking the cycle of dependency and poverty

• To build adaptive capacity & local empowerment over food/farming choices
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