Out scaling climate-smart technologies to smallholder farmers in Malawi, Zambia & Zimbabwe

Project progress

27th November, 2018, CIMMYT-Zimbabwe, Harare
Climate Smart Agriculture

Agriculture that *sustainably increases productivity*, enhances resilience (*adaption*), reduces/removes GHGs (*mitigation*) where possible, and enhances achievement of national food security and development goals”.

Main focus: **food security** and **development**

Three Pillars

1. Productivity
2. Mitigation
3. Adaptation

What do we understand by Climate-smart Agriculture

- Sustainable increase in productivity
- Climate change adaptation
- Climate change mitigation
THE PROJECT

Goal

- Contribute to increased productivity, food security and climate resilience of smallholder farmers managing maize-based farming systems in contrasting environments of Zambia, Malawi and Zimbabwe.
PARTNERS

• Implementation:
  – The Zambian Ministry of Agriculture through (ZARI)
  – Ministries of Agriculture for Malawi and Zimbabwe.
  – International Maize and Wheat Improvement Centre (CIMMYT)
  – Smallholder farmers in Malawi, Zambia and Zimbabwe Project
  – Total land Care

• Support:
  – Gesellschaft für Internationale Zusammenarbeit (GIZ) and the Centre for Coordination of Agricultural Research and Development for Southern Africa CCARDESA.
<table>
<thead>
<tr>
<th>Country</th>
<th>District</th>
<th>Agro-ecological zone</th>
<th>Average annual rainfall (mm)</th>
<th>Average temperature (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern Malawi</td>
<td>Balaka</td>
<td>Low altitude</td>
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<td>Nkhotakota</td>
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<td>Dowa</td>
<td>Mid altitude</td>
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<td>Chipata, Sinda, Lundazi</td>
<td>Mid altitude</td>
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<td>Southern Zambia</td>
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<td>Zimbabwe</td>
<td>Zaka</td>
<td>Mid altitude</td>
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</tr>
</tbody>
</table>
Background:

- Agricultural production in southern Africa is constrained by numerous factors incl.:
  - frequent droughts and in-seasonal dry-spells,
  - declining soil fertility,
  - excessive water run-off and soil erosion,
  - unsustainable land-use practices and limited adoption of improved agricultural technologies (Thierfelder et al., 2015).
Background:

- Climate projections for southern Africa until 2050 suggest temperature increases by on average 2.1-2.7°C (Cairns et al., 2012), which will lead to a delay in the onset of the rainy seasons and increased extreme events (e.g. excessive rainfall and drought stress).
- Maize production, is projected to decrease by 10-30% until 2030 and up to 50% until 2080 if no measures are taken to adapt to climate variability and change (Lobell et al., 2008; UNEP/GRID-ARENAL, 2016).
- Adaptation can be improved through the use of climate smart agriculture (CSA) technologies. Climate smart cropping systems can better adapt to the negative effects of climate change, mitigate its effects and provide farmers with sustainable increase in yield.
PROCESS:

• This project aims at understanding the vulnerability of the maize-value chain under conventional tillage towards climate-related stresses and identify “best bet” and “best fit” technologies that could help adapt the current farming systems to climate change and mitigate their negative effects.
Detailed Description of Activities

- Undertake a climate change vulnerability assessment of the selected agriculture value chain in the different selected agro ecological zones. Develop a climate risk profile for the value chain to identify the opportunities for Climate adaptation and mitigation.
Detailed Description of Activities

Piloting CSA technologies to assess climate smart effects and impacts on-farm

Piloting new CSA practices
Generate and document evidence from the long CA trials
• Based on the vulnerability assessment and pilots, identify and propose proven CSA best practices.
• Undertake a feasibility study detailing the technical design and implementation of the proposed CSA technologies and best practice.
• Develop **investment proposal** for upscaling and disseminating the proposed CSA technologies and practices with national partners and/or government which includes measures to benefit women and youth.
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PROGRESS:

• Vulnerability Assessment done.
• In-country socialization and prioritization meetings.
• Regional socialization and prioritization meeting.
• Biological and socio-economic data.
• Feasibility study for CSA technologies.
• Initial workshop to formulate the Investment proposal
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