QUALITATIVE ASSESSMENT OF THE KEY DRIVERS FOR ADOPTION, DIS-ADOPTION AND NON-ADOPTION OF CONSERVATION AGRICULTURE AMONG SMALLHOLDER FARMERS IN ZAMBIA

By

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BACKGROUND

- CA adoption rates among smallholder farmers low (from nationwide representative data)
- Dis-adoption is quite widespread
- This in spite of more than 2 decades of a myriad number of institutions promoting the practice
- Technical/physical benefits of CA compared to conventional farming are irrefutable
- So, what is going on?
This state of affairs has caused concern among various sector stakeholders.

This is more so considering that CA offers the best promise for increased smallholder productivity especially in the face of increasing climate change.

Therefore EU engaged IAPRI to conduct a comprehensive study on the determinants of adoption, dis-adoption and non-adoption as well as impacts of adoption.
Assignment in 4 phases:

1) Support to generation of nationwide representative data (RALS 2015)

2) Descriptive analysis of CA adoption and dis-adoption based on the RALS 2015 data

3) Qualitative assessment of CA adoption and dis-adoption/non-adoption – focus of this study

4) Analysis of labour and other farm costs from a supplemental HH survey – presentation later

5) Econometric analysis benefiting from all above
The global objective of the whole assignment is to learn from the existing situation in order to inform future programming.

This study assessed at community level:
- Trends in CA adoption and its drivers;
- Key reasons for CA dis-adoption;
- Key reasons for CA non-adoption; and
- Key suggestions to enhance CA adoption.
METHODOLOGY

- AEZ I – Nyimba, Sinazongwe, Sesheke
  - AEZIIA – Mumbwa, Katete, Petauke, Choma, Monze
  - AEZ IIB – Kaoma

Covered ~200 men and 162 women in FGDs
Methodology (cont’d)

- Used PRA techniques (matrix/pairwise ranking) to capture technical, economic, socio-cultural issues
- Relative importance determined from relative scores
- FGDs complemented with KIs at all levels & field direct observations
Methodology (cont’d)

- 2 communities in each district were purposively selected
- Selection with KIs (MoA including CASU, CFU)
- Key criteria:
  - Levels of adoption/dis-adoption
  - Presence of CASU or CFU
- Emphasised the use of real quotes/examples
KEY FINDINGS

1) General perceptions of CA and trends in CA adoption/dis-adoption
2) Key drivers of CA adoption (using CA)
3) Key reasons for CA dis-adoption (stopped CA)
4) Key reasons for CA non-adoption (never used CA)
5) Key suggestions to enhance CA adoption
6) Conclusions and recommendations
General perceptions of CA

- Smallholder farmers generally understood CA
- 80% of the groups worked with had correct working definitions
- The rest were not very far off from the concept though they missed certain aspects, e.g.
  - Most concentrated on minimum tillage
  - A few on crop rotation and residue retention
  - 1 said conserving everything in the soil
Trends in CA adoption by AEZ

<table>
<thead>
<tr>
<th>Period</th>
<th>AEZ I</th>
<th>AEZ IIA</th>
<th>AEZ IIB</th>
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<tbody>
<tr>
<td>1990-2000</td>
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<td>2001-2005</td>
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<td>2011-2015</td>
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## Key drivers of CA adoption – Institutional promotional activities

<table>
<thead>
<tr>
<th>Period</th>
<th>Organisations by agro-ecological zone</th>
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<tbody>
<tr>
<td></td>
<td>I</td>
</tr>
<tr>
<td>1990-2000</td>
<td>ADRA, SCAFE, Global 2000, MoA</td>
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<tr>
<td>2001-2005</td>
<td>ADRA, ASP, PUSH</td>
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<tr>
<td>2006-2010</td>
<td>FISRI, CCZ, DAPP, ASP, CRS, PUSH</td>
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<tr>
<td>2011-2015</td>
<td>FISRI, CASU, DAPP, EFSP, COMACO, WVZ, ZRCS, Zambezi River Initiative, ZNFU, Land O Lakes, Action Aid, DALSO</td>
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## Key benefits from CA adoption

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Score</th>
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<tbody>
<tr>
<td>High yields</td>
<td>82</td>
</tr>
<tr>
<td>Promotes timely field practices</td>
<td>59</td>
</tr>
<tr>
<td>Better soil water retention</td>
<td>44</td>
</tr>
<tr>
<td>Improvement of soil fertility</td>
<td>16</td>
</tr>
<tr>
<td>Better extension support</td>
<td>9</td>
</tr>
<tr>
<td>Encourages crop rotation/diversification</td>
<td>8</td>
</tr>
<tr>
<td>Pest and disease control</td>
<td>8</td>
</tr>
<tr>
<td>Hard pan breaking</td>
<td>2</td>
</tr>
<tr>
<td>Equitable responsibilities by gender</td>
<td>1</td>
</tr>
</tbody>
</table>

“In 1 lima I am able to harvest as much as someone who cultivated 1 acre under conventional farming, so hunger is no longer an issue for my family.”

“Farming using ripping is pretty quick and takes less time such that I can plant 20kg of seed in a day. Someone who uses a plough takes longer. I am able to plant a bigger area within a short time compared to someone who uses a plough.”

“... farmers who did not use CA this season are suffering because their crops have withered while ours are looking good.”
“Am seeing the benefits of CA so I want to start. The problem is I only have local maize”.
Key reasons for CA dis-adoption

“In the past years when we used to practice CA, we used to find benefits because the promoters of CA used to give us inputs. That way you could even get 2 bags of maize from a small portion of land. But starting from last year we have not found any benefits because we have not been given any seed or fertilizer so people have stopped practicing CA”

“...the lead farmers usually do not have weed problems because they are given herbicides and spray their fields soon after planting. Other farmers without the chemical have to think of how they are going to clean their fields, toiling while the lead farmers are relaxing at home”.
Key reasons for CA non-adoption

- Lack of inputs: 26
- Problem of weeds: 22
- High cost of herbicides: 9
- Lack of training/ lack of Knowledge: 8
- Attitude/ ignorance/laziness: 7
- Traditional beliefs/cultural norms/witchcraft: 6
- Limited land availability for crop rotations: 1

"The herbicides are sometimes not found in the shops. When I go to Choma, the recommended herbicides are usually not in supply and only one type is found. You find that within the first week of the onset of rains before we even prepare to plant, the weeds start growing and by then we do not have herbicides in stock. Therefore, we just resort to using a plough in order to remove the weeds."
Suggestions to improve CA adoption

- Increased input support: Score 41
- Increased/continued extension on CA: Score 37
- Introduce implements hiring scheme: Score 14
- Improved market for rotation crops: Score 4
- Local consultations/cooperation of promoters: Score 2
CONNECTING THE DOTS

- CA adoption in the communities it has been promoted has increased over the years
  - Tripling since the period 2006-2010 vs 1990s
- Key benefits of yield from increased soil fertility and water retention have been felt
- Effects more felt with increasing seasonal dry spells
- Issues impeding broad-based adoption: Institutional, technical, market access & socio-cultural
Institutional Issues

- Without taking credit away from current programs which are doing a great job
- Findings suggest local consultation and understanding need to be improved:
  - Purpose, rationale, modus operandi, expected inputs and benefits, duration, etc.
  - Need to involve all community members rather than just selected beneficiaries
- Best institutional arrangement for **broad-based** smallholder adoption of CA is MoA extension service provided a number of things are in place
Institutional cont’d

1) CA adopted as the primary extension message at all levels

2) Adequate resources are made available for training and operations of field staff – tap expertise from CFU/CASU

3) In need lead farmers can continue to be selected and trained to interphase between extension workers and farmers

4) Lead farmers should be able to explain the programmes in totality (not just technology) to both current and potential beneficiaries
Technical issues

- One of the key technical impediments to CA adoption is weed control in absence of proper use of herbicides.
- Findings suggest considerable time and effort need to be dedicated to training farmers on proper use including dispelling notions that it damages the soil.
- Private sector could be co-opted to complement these efforts and supply the chemicals to farmers, sometimes on agreed terms.
Private sector can even appoint local agents as agro-dealers to supply these chemicals and other inputs.

Or they can develop local entrepreneurs to spray farmers’ fields at a fee.

Also important that farmers are trained that all things equal, CA is superior to conventional farming whether they use local or hybrid seed.
Market access issues

- Problems with access to input and output markets not peculiar to CA
- CA training should include marketing or farming as a business to impart market seeking skills
- Willing community members should be trained and empowered to operate as agro-dealers and/or commodity assemblers/aggregators supplying larger supply chain actors upstream
Socio-cultural issues

- Promotional programmes need to involve traditional leaders to address area-specific socio-cultural issues that impede adoption.
- Trainings also need to take into account these issues e.g. witchcraft, traditional leaders not willing to learn from a lead farmer who is a subject, etc.
Thank you for your attention

For more information see our websites at:

http://www.iapri.org.zm/

Or

http://fsg.afre.msu.edu/zambia/index.htm