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### **Expansion of the Farmer Input Support Response Initiative (FISRI) to Rising Prices of Agricultural Commodities in Zambia – GCP /ZAM/071/EC**

#### **Final Evaluation Report**

September 2012  
Final

## Food and Agriculture Organisation of the United Nations

### Office of Evaluation (OED)

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## Acknowledgements

The following report represents the views of the independent assessment mission on the performance and achievements of the FISRI Project. The report assesses to what extent the Project has contributed to the promotion of capacity-building for continued support to CA promotion and food security in the farming communities of target areas.

### Phase 1: Beneficiary Assessment Study

The Beneficiary Assessment mission is most appreciative of the efforts made by the staff and management of FISRI and Extension officers in each district from the DACO to the Camp Extension Officers. We are also appreciative of a range of other individuals who provided information and discussed issues in a frank and constructive manner. The beneficiaries always gave a warm welcome to the mission and provided valuable insights into project activities. Through the Director of Agriculture we would like to thank MAL Extension staff and the CA Core Teams and partners of the project especially the camp officers in Chibombo, Kapiri Mposhi, Mumbwa, Mpongwe, Chipata, Petauke, Chongwe, Kalomo, Monze, Sinazongwe, and Kaoma. The staff of FAO Project Team made it possible to construct the list of districts and availed reports within their reach. Without their input, the assignment would have been near impossible.

### Phase 2: Final Evaluation of FISRI

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The Evaluation Team comprised:

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Refer **Annex 7.1** for the Brief CVs of the Final Evaluation Team.

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## Acronyms

AIDS	Acquired Immune Deficiency Syndrome
BEO	Block Extension Officer
CA	Conservation Agriculture
CA/F	Conservation Agriculture or Conservation Farming
CAC	Camp Advisory Committees
CAP	Conservation Agriculture Programme
CASAD	Conservation Agriculture for Sustainable Agricultural Development
CASPP	Conservation Agriculture Scaling-Up for increased Productivity & Production
CASU	Conservation Agriculture Scaling-Up Programme (EU EDF10)
CEO	Camp Extension Officer
CF	Conservation Farming
CFU	Conservation Farming Unit
DACO	District Agricultural Co-Ordinator
EUFF	European Union Food Facility (EUFF)
FAO	Food and Agriculture Organisation of the United Nations
FF/PF	Follower-Farmer or Participating-Farmer. Interchangeable
FFS	Farmer Field School
FGD	Focus Group Discussion
FISP	Farm Input Support Programme
FISRI	Farmer Input Support Response Initiative
GART	Golden Valley Agricultural Research Trust
GFP	Gender Focal Person
GWE	Gender and Women Empowerment
HIV	Human Immunodeficiency Virus
IEC	Information, Education and Communication
LF	Lead-Farmer
MACO	Ministry of Agriculture and Cooperatives
MAL	Ministry of Agriculture and Livestock
MSP	Mechanisation Service Provider
MTZ	Mobile Transactions Zambia
NGO	Non-Governmental Organisation
PF	Participating Farmer
SAO	Senior Agricultural Officer
SMS	Subject Matter Specialists
ZARI	Zambian Agricultural Research Institute
ZCAA	Zambia CA Association
ZNFU	Zambia National Farmers Union

## 1.0 Executive Summary

### 1.0 Background to the Final Evaluation

The overall aim of the final evaluation is to provide information on lessons learnt from implementing the three FISRI projects to assist decision-makers in the Ministry of Agriculture and Livestock (MAL), EC and FAO on the best way to scale-up conservation agriculture in Zambia. The implementation periods of these projects have some overlaps and a limited period within which the beneficiary and partners have had to implement these projects (absorbing €16.9million in 36 months). While indications point to the projects being broadly successful and producing some expected results, it is deemed necessary to carry-out a detailed evaluation of the three projects so that the findings are fed into the formulation of the foreseen follow-up 'Conservation Agriculture Scaling-Up' (CASU) programme, to be implemented in 2013 using the same aid modality and implementation arrangements under EDF10.

The Final Evaluation was conducted in 2 phases, as follows:

- **Phase 1: Beneficiary Assessment Study (08.03-03.05.2012)**, by means of Desk Research, Field Study (11 Districts), Synthesis and production of a Beneficiary Assessment Study/Report;
- **Phase 2: Final Evaluation Mission (22.04-31.05.2012)**, by means of Desk Research, Consultation/Field Visits (4 Districts), Aide Mémoire Presentation, Synthesis and production of a Final Evaluation Report;

Refer **Annex 7.2** for the Terms of Reference for the Final Evaluation Process (and Final Evaluation Team).

### 1.1 Evaluation Criteria

The Evaluation Criteria can be summarised as:

- **Relevance** (Problems & Needs): Satisfactory i.e. highly relevant to Zambia strategic plans;
- **Effectiveness** (Achievement of Purpose): Satisfactory i.e. innovative in approach to increasing access to inputs, using technology and engagement with the private sector for greater outreach;
- **Efficiency** (Sound Management & Value-for-Money): Less Than Satisfactory i.e. weak M&E has resulted in poor quality reporting and insufficient evidence-based data collection/analysis;
- **Impact** (Achievement of Wider Effects): Satisfactory i.e. CA best-practice adoption is well underway, led by the Government of Zambia and supported by international donors, including the EU through FISRI;
- **Sustainability** (Likely Continuation of Achieved Results): Satisfactory i.e. while sustainability may be questionable were FISRI to cease fully, the continuation of CFU and the follow-up with CASU will augment and sustain the efforts underway under FISRI;

Overall, the rating for the Final Evaluation of FISRI (I-III) is a qualified 'Satisfactory' with special attention drawn to the shortcomings in project management, notably progress reporting and M&E<sup>1</sup>.

### 1.2 Overall and Main Conclusions

FISRI (I-III) can be seen as a 'qualified success' in terms of its efforts to integrate with MAL in addressing the promotion of CA as a means of augmenting food security and a mitigation of the effects of increasing food and input prices by means of: (i) targeting of capacity-building/training to MAL CEOs and to lead-farmers in enhancing extension approaches; (ii) increasing access to inputs and equipment for lead-farmers; (iii) facilitating payment for inputs and services through an e-voucher system; and (iv) introduction of a pilot mechanisation scheme, through development of private sector agri-contractors. Where applied in the selected districts, there is definite evidence of benefits accruing to lead-farmers (and in turn to some follower-farmers) of increased yields, improved CA farming practices and some improved linkages with agri-dealers and agri-contractors, though its documentation and demonstration effect is somewhat restricted.

FISRI is a very strategic and high-profile project that is a major support to government and MAL policy on promoting CA as a contributor to climate-smart, sustainable agricultural practices and increased food security.

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<sup>1</sup> Definitions: Highly Satisfactory (i.e. fully according to plan or better); Satisfactory (i.e. on balance according to plan, positive aspects outweighing negative aspects); Less Than Satisfactory (i.e. not sufficiently according to plan, taking account of the evolving context; a few positive aspects, but outweighed by negative aspects); Highly Unsatisfactory (i.e. seriously deficient, very few or no positive aspects).



Its major strengths (as identified under the SWOT Analysis) include strong integration with MAL and government structures, promotion of private sector participation and introduction of innovative approaches to accessing inputs and agri-services through the e-voucher scheme and initial mechanisation up-scaling approaches.

As an external evaluation exercise, the focus of the evaluation is not necessarily concentrated on highlighting the successes and achievements of FISRI, but more in identifying the areas for improvement and the lessons learned that can be taken forward in the remaining period of FISRI III (to December 2012) and in the context of future programming, in particular that of CASU.

The Main Conclusions are summarised (under 7 main headings) as:

#### **A. Conservation Agriculture Best-Practice Approaches**

1. CA best-practice approaches can be reinforced more effectively through better informational, educational and communication approaches.
2. FISRI promoted strong linkages with MAL but this needs to be enhanced further through improved and integrated governance, reporting and M&E.
3. FISRI and FISP (the Farmer Input Support Programme) should be more clearly delineated to ensure they complement each other more effectively in the promotion of CA best-practice.
4. CA best-practice has not been effectively ‘institutionalised’ across the agricultural sector in terms of its integration into policy, research and educational institutions.
5. There needs to be greater understanding at all levels of the philosophy and principles of CA before it is adopted as a ‘best-practice’ approach, as there is evidence that it is becoming more activity-based with less understanding of why it should be adopted in the first place.

#### **B. Lead-Farmers & Participating (‘Follower’) Farmers**

6. As an extension approach, the role of the lead-farmer was not performance-based and was not sufficiently understood by the follower-farmer (often leading to resentment).
7. Follower-farmers were essentially ‘members without benefits’ as they were not eligible to qualify for the e-vouchers at any stage (regardless of their performance or potential).
8. While there was evidence of CA demonstration plots organised by lead-farmers, the quality of some demonstration plots<sup>2</sup> failed to portray the real potential of CA due to poor management and lack of attention to detail and, as such, failed to fulfil their function.

#### **C. Capacity-building & Training**

9. Training and capacity-building appears to be un-programmed as it was not based on a comprehensive training needs assessment (across CEOs, lead-farmers, follower-farmers, agri-dealers and agri-contractors) and was sometimes out-of-synch with the farming cycle, was ad-hoc and too brief to be effective, and there was insufficient follow-up and verification to ensure sustainable comprehension and application.
10. MAL DACOs and CEOs are critical to CA adoption, but the BEOs<sup>3</sup> were excluded in the process, with the result that communication, logistical support and efficiencies were often less than effective.
11. In the absence of a performance-based approach to FISRI implementation at camp level, the effectiveness of the capacity-building and training could have had greater impact if targeted at ‘early adapters’ and more progressive lead-farmers and follower-farmers using a more ‘open’ system.

#### **D. E-Voucher Scheme & Mechanisation**

12. The e-voucher scheme facilitated the development of the agri-dealers and increased access to inputs to the lead-farmers in an innovative and cost-effective manner. However, the e-voucher distribution to lead-farmers and other facilitators was not performance-based and did not evolve to meet the on-going development needs of the farmers.

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<sup>2</sup> The labelling of some farmer groups as Farmer Field Schools was a misnomer, as the lead-farmer system follows a different approach. However, it may be worth re-visiting the role of the demonstration plot in the FFS model.

<sup>3</sup> Block Extension Officers

13. Mechanisation is key to up-scaling CA, but there are challenges in terms of availability of equipment, knowledge of its use and maintenance and delays in accessing mechanised services as early as possible in the season.
14. The 'static' approach to the application of the e-voucher scheme may have inadvertently contributed to the creation of a 'dependency syndrome', with an over-focus on provision of inputs to selected lead-farmers without a performance-based approach to its on-going application being applied.

#### **E. Gender Mainstreaming & Food Security**

15. Gender Mainstreaming and related social aspects were not adequately addressed in FISRI and there were no specific targets for outcomes, outputs and activities in this regard.
16. Food Security is not comprehensively addressed in the project design, though it has focused on food production and availability, as it has not adequately addressed nutrition requirements, food storage, food preservation, value-addition and food safety aspects.

#### **F. Market-orientation & 'Commercialisation'**

17. FISRI was predominantly production-oriented in its approach to promotion of CA, which was a necessary requirement at the early stages of the project cycle. However, attention to market aspects (in terms of market access, market information, supply/value-chain development etc.) and access to finance is not sufficiently addressed in FISRI and must be incorporated into CASU (or other relevant programmes).

#### **G. Project Design and M&E Issues**

18. Overall, as a cross-cutting issue, the project M&E was very weak arising from a mix of project design and implementation challenges (including staff turnover) that affected project performance and efficiency as a result of poor data collection/analysis, reporting and validation/follow-up aspects.

### **1.3 Key Lessons Learned**

The key Lessons Learned are summarised as:

1. There is a need for stronger integration and co-ordination of the key stakeholders and players in CA in Zambia in order to capitalise on the significant efforts achieved so far and to enhance the peer review, learning and leverage of resources and talent available through donor, private sector and research/educational institutions, where synchronisation and co-ordination of projects should have been better implemented.
2. Maize and fertiliser should not have been made available under the FISRI e-voucher scheme, particularly when maize and fertiliser were available under FISP (as a farming input project). As a consequence, the FISRI project may have been inadvertently misconstrued by farmers as an input project (due the inclusion of maize and fertiliser in the e-voucher scheme), somewhat compromising its impact as a CA promotion project.
3. There was no natural progression and evolution within FISRI in terms widening of the levels of participation and the development/graduation (through performance-based approaches) of the various participants.
4. Concentration of key interventions and activities into 'specialised nodes' (e.g. procurement, application and use of herbicides) would serve to minimise risk of mis-use, maximise capacity-building and enhance training effect, particularly at the early stages of target-farmer development.
5. A major opportunity was missed to establish meaningful CA best-practice demonstration effect and a foundation for on-going research (through GART and/or ZARI) as a result of delayed and/or ineffective M&E and data collection/analysis.
6. Focus on CA technical issues without attention to gender relations, equality and social issues can reduce the impact of CA in terms of its adoption, impact and sustainability. Lack of consideration of socially ascribed gender roles in CA, the differential access and control of benefits and resources, practical and strategic gender needs of women and men in the community can reduce CA adoption and up-scaling.

## 1.4 Key Recommendations

The key Recommendations are summarised as:

### Balance of FISRI III

1. In the remaining 6 months of FISRI III, address the urgent requirement to improve the governance, M&E and reporting to improve project performance further. This will also assist in the preparation for the transition to CASU (in early 2013) by ensuring adequate systems and procedures are reinforced to maximise the seamless relay from FISRI to CASU in terms of improved integration between MAL and FAO technical backstopping and improved camp-level data collection and analysis under a tighter M&E system (integrated into MAL systems).
2. FAO technical backstopping should be more integrated with MAL systems and personnel on an on-going operational basis. Consideration should be given to the relocation of the existing FAO M&E and Agronomist staff to MAL, on a part-time basis, to better integrate with MAL structures and to provide real-time proactive technical advice and back-stopping within MAL in order to: (i) address existing issues for improvement within FISRI; and (ii) prepare the necessary systems and structures that will be required for a 'seamless transition' from FISRI to CASU.
3. An 'End-Line Survey' should be conducted by the end of FISRI III, based on the Baselines undertaken in FISRI I and II, to determine the impact and benefit of FISRI through survey techniques, to compensate for the absence of meaningful M&E evidence-based data for FISRI (i.e. absence of consistent progress reports, as well as systematic verification and spot-checks over the project cycle).

### Future Programming (CASU) and Promotion of CA

#### A. Conservation Agriculture Best-Practice Approaches

1. CA needs to be better 'institutionalised' in terms of its integration into policy, research and educational institutions, and needs to be better promoted and incorporated into existing farmer practices through more effective best-practice demonstration approaches.
2. CA best-practices need to be more effectively documented for evidence of CA impact in terms of climate-smart approaches, increased yields and reduced input and labour costs.
3. There is a need for greater cross-collaboration and co-ordination between the various CA initiatives underway, in particular between FISRI (and CASU) and CFU, to promote greater peer-review and information-sharing.

#### B. Lead-Farmers & Participating ('Follower') Farmers

4. CA programmes must ensure greater engagement at participating-farmer level – a bottom-up approach – with greater emphasis on CA extension approaches being targeted at this level, promoting best-practice approaches linked to performance-based incentives.

#### C. Capacity-building & Training

5. Capacity-building and training needs to become more sustainable and replicable through increased Train-the-Trainer approaches linked to performance-based incentives.
6. A comprehensive Field Training Manual needs to be developed and adopted to ensure more consistent and relevant training and capacity-building is achieved (incorporating: CA concept/principles; CA best-practice approaches; Inputs use; Farm Management/Cost-Benefit Analysis; etc.).

#### D. E-Voucher Scheme & Mechanisation

7. E-Voucher Schemes need to become more evolutionary in nature through linkage with the inflation index, greater recognition of the farmer development stage and increased focus and emphasis on performance-based approaches to use of incentives in order to minimise the risk of creating a 'dependency syndrome'.
8. Mechanisation needs to be scaled-up in developing 'commercial' CA, but care is needed in ensuring economically viable approaches/business models are adopted, while availability of equipment, access to finance/leasing and development of alternative ownership models need further exploration and focus.

## **E. Gender Mainstreaming & Food Security**

9. Gender Mainstreaming and ‘latent’ social issues need to be addressed in any CA adoption programmes, as issues around mechanisation, cash-crops and access to markets have residual issues which affect womens’ involvement and empowerment.

## **F. Market-orientation & ‘Commercialisation’**

10. In order to achieve economies of scale and to avoid an over-emphasis on production-oriented CA approaches, there is a need to incorporate ‘commercial’ best-practice to CA development in CASU. This can be achieved through strengthening of the supply-chain, enhanced value-chain development (through greater emphasis on value-adding/processing activities), an increased focus on market access (local, regional, national and international) and market support measures, including market information, with greater emphasis on farmer organisation, marketing and access to seasonal working capital/trade finance.

## **G. Project Design and M&E Issues**

11. Project M&E needs to be comprehensively addressed and strengthened in CASU, with greater emphasis on integrated (not parallel) systems being developed in MAL, with active on-going support from FAO technical backstopping, including active deployment of FAO project staff into MAL to enhance more effective integration and synergy<sup>4</sup>.
12. A project of the size of FISRI (and CASU in the future) should have had a dedicated management function and FISRI should have been much more closely integrated with FAO Representation activities. The future CASU project should have a full-time project manager (or CTA), and should also have a clearer definition of FAO’s technical backstopping arrangements.
13. The oversight function as exercised by the Steering Committee and the Technical Committee was not well documented. The future CASU project must make sure that all meetings are correctly minuted and available to all stakeholders.
14. Likewise, for a project of this size, FAO should better organise its Project Task Force meetings and make the records available to all stakeholders.

## **1.5 Summary of the Beneficiary Assessment Report**

1. The study was an input into the final evaluation of the FISRI and was meant to provide information at beneficiary level regarding the structures constructed to service the target farmers, and to assess which changes had taken place due to FISRI.
2. A team of four consultants<sup>5</sup> undertook the study of “Beneficiary Assessment of FISRI” in the period 14 March 23 to April 2012. The field visit was concentrated in the 11 districts (namely Chibombo, Kapiri Mposhi, Mumbwa, Mpongwe, Chipata, Petauke, Chongwe, Kalomo, Monze, Sinazongwe, and Kaoma). The districts were chosen on the basis of length of period they have been with the project, the agro-ecological regions of the country and the accessibility. Data used in the evaluation exercise were obtained through a participatory rural appraisal in selected project communities, complimented with records from the FAO project team and the district project offices.
3. The camps within districts were randomly selected from the camp officers available at the district. Lead-farmers in selected camps were brought to a central place for focus group interviews. Three were selected for follow-up case studies. The follower-farmers under one of the Lead-farmers were interviewed in a focus group at camp level. At most, three of the follower-farmers were visited to observe their field and interview them individually.
4. The FISRI project set-out to improve food security at household level of farmers in the rural Zambia. To enhance this, the project selected agricultural production practices that had proven track record of increasing productivity and thus contribute to increased production. Against a background of long research on production practices in Zambia, CA technologies were identified and promoted.

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<sup>4</sup> As a back-up (and/or if regular comprehensive reporting has operational problems), a sample survey approach should be adopted whereby selected project sites are regularly monitored in order to identify trends and issues.

<sup>5</sup> Mr. Mukelabai Ndiyo (Farming Systems), Dr Mick Mwala (Capacity-building/Training), Shinga Mupindo (Gender/Food Security), Sepo Marongwe (Conservation Agriculture).

The specific practices that constituted the Best Agricultural Practices in CA were guided by three key principles: (i) Minimum soil disturbance, (ii) Crop residue management, (iii) Crop rotations.

5. Most of the beneficiaries have been involved in FISRI and the best practices for 3 years starting in 2009. Some districts came on board in 2010 and 2011. Both men and women were consulted during the study and women comprised 34% of respondents. Over the project period, the area under CA was 34% overall. Demonstration plots were used in the extension of CA among the beneficiaries. The demos were established by camp extension officers and by lead-farmers.
6. However, the quality of the demonstrations compromised the message that was intended and may have led to the number of follower-farmers being often less than the 15 that each lead-farmer was meant to have. The ultimate beneficiary of FISRI is the follower-farmer but the project has limited documentation of this beneficiary. This results from equating beneficiary to receiving e-vouchers.
7. Minimum Tillage and Crop Rotations were the two key CA principles that were practiced while mulching was almost absent. There was evidence of the knowledge of the reasons behind the practice of CA, although farmers could not isolate the CA concept from the regular good agronomic practices that are enhanced through practicing CA.
8. The management practices like weeding and plant population have direct impact on maize yields. A low plant population encourages weed growth and leads to decline in yield and increased expenditure on weed control. Herbicides have the advantage of killing the weeds before the crop emerges. The crop has potential to grow in a weed-free environment thereby improving productivity. A lot more farmers have bought herbicides for cash. The e-vouchers have induced an interest in herbicides far beyond expectations. The weed management strategies used in the project have focused exclusively on the use of herbicides and manual weeding, leaving out other approaches. A more integrated approach could have been used to avoid over-reliance on herbicides and to provide alternatives for those farmers who cannot afford the herbicides.
9. The *extension model used was the Lead-farmer*. This model adds a layer of community extension workers called the lead-farmer below the Camp officer. The camp officer interfaces with the ultimate target, the participating farmer, through the lead-farmer. The appreciation of the role and responsibilities of the CEO was mixed. For example, the application of the e-voucher received by the camp officers varied between camps. This ambiguity about the role of the e-voucher is reflected in the quality of the demonstrations at their camps which, were not configured to cater for large number of visitors.
10. The performance of the *lead-farmer approach* calls for closer scrutiny. There is a growing discontent between the lead and follower-farmers, a consequence of e-vouchers received by lead and not follower-farmers. The FISP and FISRI could be better synchronised so that follower-farmers receive FISP inputs as is the case in some districts. Given the discord between the lead-farmer and the follower-farmers, a careful examination is required to establish where the benefits of the e-voucher for lead-farmers fall. If the benefits are the heightened appreciation of CA leading to adoption onto the full field, and the corresponding despondence of the follower-farmer, then a system of rotation or graduation of the lead-farmers is strongly recommended. In view of such a scenario, use of farmer field schools in the project could enhance the learning for the lead-farmers and also provide permanent CA fields that will provide long-term data for CA development and adaptation and also provide evidence for best agriculture practices.
11. *Follower-farmers* are essentially “club members” without benefits. The project is seen as a source of support for members. There is a growing division between lead-farmers and follower-farmers because of this apparent exclusion from the perceived benefits of the project. The district extension officers have explained that the lead-farmer demo is for all follower-farmers to learn from.
12. The expansion or replication pathway for the lead-farmer model of extension has stalled. The discord between the lead-farmer and follower-farmer is palpable. New camps on to which the programme has expanded do not have follower-farmers due to the conflict over e-vouchers and bicycles which lead-farmers have and follower-farmers do not. Overall, the number of follower-farmers is lower than planned as often only 8 out of the 15 are actively or purposively involved in the project activities. In this regard, the e-voucher does not sit well with the lead-farmer concept and may be an obstacle to the linkages between the lead-farmer and the follower-farmer, quite the opposite of what it was meant to be.



13. Agro-dealers and the e-voucher scheme have given rise to an emerging competition amongst agro-dealers which is contributing to an environment of fair prices for farm the inputs. Despite this positive development, there are concerns about reported differences in prices between e-voucher and non-voucher shops during the e-voucher season.
14. E-vouchers have greatly facilitated access to inputs and CA implements thereby making it possible for farmers to experience the application of CA at scale. The e-vouchers have also stimulated the agro-dealers to increase their network and grow their business thereby bringing inputs closer to the farmers. The e-voucher was cost-effective compared to the project distributing the inputs directly.
15. The mechanisation pilot was key to up-scaling of CA. Mechanisation in conjunction with herbicides has changed the way constraints are viewed on smallholder farms. To better promote mechanisation it must be up-scaled. The first season with 10 tractors has demonstrated that the demand far outstrips supply and that queuing-up for the service resulted in some reverting to conventional farming. We recommend that the number of tractors in the district be increased while the operators remain profitable.
16. The introduction of mechanisation has usually resulted in advantages such as (a) Average area under cultivation increasing dramatically, (b) Average total production of maize among oxen owners doubling. As in mechanisation in 1900, there have not been enough oxen for every farmer, even in cattle-owning regions of the country. Late planting was experienced this year due to waiting for the tractor or other mechanisation options.
17. Use of chaka hoes for basin-making has encountered the constraint of the hoe in general which oxenisation programmes have been trying to solve since the 20th Century. FISRI is one in line of projects that are promoting faster, larger and earlier land preparation. Planting basins may be earlier but they are not faster or lighter on the practitioner. The tractor-drawn ripper and planter improves upon the ox-drawn implements. This stage, however, is accessible largely by hire, placing control of time in the hands of the operator, exposing the farmer to late planting, constraints first addressed by making basins.
18. Per capita availability of farm implements e.g. ripper or plough is still at the same or lower rate as in the 1980s or from the time the plough became part of smallholder agriculture in Zambia. In the interim, before all farmers own their own draft power or can afford to hire, delays in crop establishment will be experienced. The solution in the interim is the chaka hoe until such time that the per capita income rises to permit independence in draft power.
19. Project M&E system in place was not able to avail of sufficient data and information from the farmer to the national level. The new methods of land preparation have not been well studied on farm yet the data reaching the headquarters does not attend to variables that may permit understanding the contribution of these new methods to productivity. Given that FISRI is promoting new methods of planting, it is an omission that no data is available on plant population density. As farmers still plant large tracts under conventional ploughing practices, the above should also be collected on plots not under CA.
20. Capacity-building was meant to enable the extension system, ranging from those at the headquarters in Lusaka to the lead-farmer, to function in the support of the promotion of CA now and in the future. Depending on the level in the chain, training conducted at all levels was taking place outside a documented plan. Expression of the knowledge acquired was difficult to discern at follower-farmer level due to limited application of the CA practices ascribed to farmers' limited access to inputs. The type of training received by the beneficiaries appears to have been activity-based and thus resulting in the farmers lacking in appreciation of the full CA concept. This may be a result of the absence of a comprehensive training guideline on CA, which meant that trainers focused only on specific activities that were relevant at any given time during the season: the upstream and downstream linkage of such activities was not emphasized in the context of CA. Regular monitoring of the training could have allowed the trainers to make adjustments to the training to fit the demand.
21. FISRI should attend to market access for crops other than maize. Crops grown in rotation are perceived not to have a market, leading to putting them on a low priority in farmer's activities. To encourage crop rotations, crop buyers should flag their intentions early in the season so that farmers can plan their cropping. Market access is integral to on-farm practice. FISRI should link-up with other programmes attending to crop marketing such as Dunavant.

22. FISRI has resulted in improved food availability/access due to increased staple food productivity. Crop rotation has offered an opportunity for increased dietary diversification. FISRI design is focused on food production/availability but other important food security components (i.e. food storage, nutrition, food safety, food conservation, food consumption and value-addition) have not received sufficient attention.
23. FISRI has contributed towards attaining of some strategic and practical gender needs of women. Gender mainstreaming was however, not systematically incorporated in FISRI design, implementation, monitoring and evaluation processes. There were no gender outcomes and indicators that were defined at project design. No gender analysis was carried-out prior to formulating the different phases of the project. There are no clear staff gender mainstreaming responsibilities and accountability systems. CA capacity-building for extension staff has been focused on technical issues at the exclusion of social and gender-sensitive issues. There were no equal opportunities for utilisation, access and control of mechanisation and herbicide spraying between female and male farmers.

## Recommendations

1. To improve monitoring and evaluation, the people who collect data must have the use for it. It is unlikely that data will be collected if the capacity or the need to use it does not exist. Until recently, there was no single person designated to lead the M&E function in the project. Although staff at various levels report of monitoring and backstopping visits, these visits do not fall in any defined framework and it is difficult to document the results of such “monitoring visits”. The FISRI management should designate a member of the core team at each level, from the national to the district, who should co-ordinate the M&E. The data availed to the team was often aggregated at district level or camp level with rare disaggregation into gender, for example. The capacity to integrate gender concerns at implementing level is required.
2. In the face of alienation of the follower-farmers and the loss of the demonstration at out-scaling in farm, the justification for keeping the lead-farmer is diminished. Instead, the best performing follower-farmers should be picked every two years so that members of a group know they have a chance to access the e-voucher scheme on merit. Better still, each member of a study group may have an equal chance of hosting the e-voucher by randomly selecting an e-voucher recipient every two years. Under such a scenario, farmer field school approaches could enhance the learning for the lead-farmer and also provide long-term data sources for CA development and adaptation.
3. The follower-farmer in this project represents the ultimate impact of the project. As such, it is important to monitor the uptake processes of the various components of CA and other project elements among the follower-farmers. Long-term monitoring guidelines for these farmers are important as they provide indicators for the sustainable adoption of the CA technologies and other project elements that were promoted. There is need to identify the successful follower-farmers and use them as platforms for lesson learning and understanding of adoption issues.
4. To improve the understanding and appreciation of the CA concept, to ensure sustainable adoption and to encourage innovation, a comprehensive CA training guideline should be put in place. This will enhance the beneficiaries’ understanding of CA and avoid referring to general agronomic practices as CA.
5. Other forms of non-voucher incentives should be considered. For instance, the farmer could receive certification to prove they have attained a yield level above 5 tons per hectare while using CA. Such certification would indicate the farmer is less vulnerable to weather changes and therefore, attractive to finance institutions who may find it safe to extend seasonal loans to such farmers. The fact that CA practice should confer preference for loans should be a stronger but neutral incentive limited only by the level a farmer dedicates to CA practice.
6. As long as the barrier to entry is the cost of the tractors, operators will enter the business until profits become zero. To avoid over-concentration in the hands of a few the financing institutions should vary the repayment period from 3 years when the demand is high to 6 years when the demand is in equilibrium with supply. Keeping the number of operators high in this manner will open access to more farmers. In scaling-up to meet the demand, more tractors per operator are to be preferred to many one-tractor operators. Such tractors working in series will serve all clients effectively.
7. The graduation from the ox to 4-wheel tractor is too steep. FISRI may consider other power sources in-between. The project teams should ensure there is equitable access to mechanisation services to women given the factors that may limit that access such as social assets.

8. Since FISRI aims to increase productivity (i.e. yield etc.), it is necessary to pay attention to yield components. Monitoring data should be collected on a sample of farmers covering the following among others:
  - Plant population at emergence
  - Plant population at harvest
  - Weed score at 2 months after planting.
9. During the 12/13 season, FISRI M&E should establish the factors that determine plant population under the various seedbed preparation methods. To achieve that, the CEOs need essential tools such as tape measures etc. to be part of their field kit.
10. Once the advantages of the Fiterelli planters are clearly documented (i.e. plant population, accurate fertiliser application, speed etc.) farmers should be encouraged to buy their own Fiterelli or team up in groups of 5 or more to share the cost of one unit.
11. For future programming, carry-out gender analysis, develop clear gender equity outcomes and indicators and establish clear gender mainstreaming responsibilities and accountabilities within project staff and the extension delivery systems. Appoint a project Gender Focal Person (GFP) with clear terms of reference from within current staff and include gender and social issues in CA capacity-building for extension staff.
12. Develop a gender mainstreaming strategy and information, educational and communication (IEC) material on CA should positively reflect gender dimensions.
13. Consider integration of diverse food products with value-addition and market linkages to provide increased incomes for women. Consider inclusion of potential female lead-farmers for ownership of mechanised services, develop a gender-sensitive model for providing support for herbicide spraying.
14. Monitoring and evaluation systems should integrate gender aspects. Data that is generated from the project should be disaggregated, analysed and used for future programming.

Refer **Annex 7.3** for the full FISRI Beneficiary Assessment Report.



## 2.0 Rationale and Focus

### 2.1 Background to the Final Evaluation

The overall aim of the final evaluation is to provide information on lessons learnt from implementing the three FISRI projects to assist decision-makers in the Ministry of Agriculture and Livestock (MAL), EC and FAO on the best way to scale-up conservation agriculture in Zambia. The implementation periods of these projects have some overlaps and a limited period within which the beneficiary and partners have had to implement these projects (absorbing €16.9million in 36 months). While indications point to the projects being broadly successful and producing some expected results, it is deemed necessary to carry-out a detailed evaluation of the three projects so that the findings are fed into the formulation of the foreseen follow-up 'Conservation Agriculture Scaling-Up' (CASU) programme, to be implemented in 2013 using the same aid modality and implementation arrangements under EDF10.

#### 2.1.1 Purpose of the Final Evaluation

The final evaluation has the following specific objectives:

- Assess progress made, identify areas for improvement and make recommendations for the remaining implementation period of the project;
- Assess the need for adjustments to the project's timeframe and make recommendations on the modalities (major design components, implementation approach) of a follow-up phase or replication phase of the project;
- Document lessons learned so far;

#### 2.1.2 Scope of the Final Evaluation

The final evaluation will assess the project according to the following categories:

- Its relevance to: national development priorities, needs of the population, and farmers in particular, FAO Global Goals and Strategic Objectives/Core Functions and other aid programmes in the sector;
- Robustness and realism of the theory of change underpinning the project, including logic of causal relationship between inputs, activities, expected outputs, outcomes and impacts (against specific and development objectives) and validity of indicators, assumptions and risks;
- Quality and realism of the project design, including:
  - Duration;
  - Stakeholder and beneficiary identification;
  - Institutional set-up and management arrangements;
  - Approach and methodology;
- Financial resources management, including:
  - Adequacy of budget allocations to achieve outputs;
  - Coherence and soundness of Budget Revisions in matching necessary adjustments to requirements of implementation;
  - Rate of delivery and budget balance at the time of the evaluation;
- Management and implementation, including:
  - Effectiveness of management, including quality and realism of work plans;
  - Efficiency and effectiveness of operations management;
  - Gaps and delays if any between planned and achieved outputs, the causes and consequences of delays and assessment of any remedial measures taken, efficiency in producing outputs;
  - Effectiveness of internal monitoring and review processes;
  - Efficiency and effectiveness of coordination and steering bodies (if any);
  - Co-ordination with other projects active in the same sector;
  - Quality and quantity of administrative and technical support by FAO; and
  - Timeliness, quality and quantity of inputs and support by the Government and resource partner;
- Extent to which the expected outputs have been produced, their quality and timeliness;

- Extent to which expected outcomes have been achieved in particular with regard to the following aspects:
  - Sustainable agricultural development and natural resource management: extent and quality of activities and impacts on environmental sustainability of natural resource management practices promoted by the project; extent and quality of activities and impacts on socio-economic and cultural sustainability of practices promoted by the project;
  - Policies: extent/quality of activities and impacts on creating a conducive national policy and legal environment for the objectives of the project, extent/quality of activities to support the wider GIAHS Initiative in creating a conducive international policy and legal environment for its objectives;
- Use made by the initiative of FAO's normative products and actual/potential contribution of the initiative to the normative work of the Organisation (in particular Organisational Result F1: Countries promoting and developing sustainable land management and Organisational Result A1: Policies and strategies on sustainable crop production intensification and diversification at national and regional levels);
- Assessment of gender mainstreaming in the initiative, which will cover:
  - Analysis of how gender issues were reflected in project objectives, design, identification of beneficiaries and implementation;
  - Analysis of how gender relations and equality are likely to be affected by the initiative;
  - Extent to which gender issues were taken into account in project management;
- Prospects for sustaining and up-scaling the initiative's results, by the beneficiaries and host institutions, after the termination of the initiative. The assessment of sustainability will include, as appropriate:
  - Institutional, technical, economic and social sustainability of proposed technologies, innovations and/or processes;
  - Perspectives for institutional uptake and mainstreaming of the newly acquired capacities, or diffusion beyond the beneficiaries or the project;
  - Environmental sustainability: the initiative's contribution to sustainable natural resource management, in terms of maintenance and/or regeneration of the natural resource base;
- Overall performance of the project: extent to which the initiative has attained, or is expected to attain, its intermediate/specific objectives and FAO Organisational Result/s (impact), and hence, to the relevant Strategic Objectives and Core Functions. This will also include the identification of actual and potential positive and negative impacts produced by the initiative, directly or indirectly, intended or unintended;

The mission will also evaluate if project resources were efficiently used to support the overall project objective given the overall adverse factors during project life.

Based on the above analysis, the evaluation will draw specific conclusions and formulate recommendations for any necessary further action by Government, FAO and/or other parties to ensure sustainable development, including any need for follow-up action. The evaluation will draw attention to specific good practices and lessons of interest to other similar activities. Any proposal for further assistance should include specification of major objectives and outputs and indicative inputs required.

### 2.1.3 Methodology of the Final Evaluation

Under the overall guidance of the FAO Office of Evaluation:

- The evaluation will adhere to the UNEG Norms & Standards<sup>6</sup>;
- The evaluation will adopt a consultative and transparent approach with internal-external stakeholders throughout the evaluation process. Triangulation of evidence and information gathered will underpin the validation of evidence collected and its analysis and will support conclusions and recommendations;
- The evaluation will make use of the following tools: review of existing reports, semi-structured interviews with key informants, stakeholders and participants, supported by check lists and/or interview protocols; direct observation during field visits; surveys and questionnaires; the Sustainable Livelihoods Framework<sup>7</sup>; the Strengths, Weaknesses, Opportunities and Threats (SWOT) framework for assessment of project results<sup>8</sup>.

<sup>6</sup> <http://www.uneval.org/normsandstandards>

<sup>7</sup> The Sustainable Livelihoods Framework identifies five different capitals (human, social, natural, financial, and physical), each including different assets. It helps in improving understanding of livelihoods, in particular of the poor. For more information, among others: [http://www.livelihoods.org/info/guidance\\_sheets\\_pdfs/section2.pdf](http://www.livelihoods.org/info/guidance_sheets_pdfs/section2.pdf)

<sup>8</sup> SWOT is a widely used strategic planning tool, useful also in the assessment of development interventions, to canvass their strengths and weaknesses, as well as future perspectives. It is particularly used in focus groups, but it can be adapted to individual interviews as well.

The Final Evaluation was conducted in 2 phases, as follows:

- Phase 1: Beneficiary Assessment Study (08.03-03.05.2012)
  - Desk Research
  - Field Study in 11 Districts
  - Synthesis and Study Report
- Phase 2: Final Evaluation Mission (22.04-31.05.2012)
  - Desk Research (refer **Annex 7.06** for a list of reference documents consulted)
  - Consultation and Field Study in 4 Districts (refer **Annex 7.05** for a list of consultation meetings held)
  - Aide Mémoire Presentation (refer **Annex 7.04** for a copy)
  - Synthesis and Final Report

#### 2.1.4 Final Evaluation Team

The Evaluation Team comprised:

- |   |   |
|---|---|
| - Mr. Flor E. Healy (Irish, resident in South Africa) | Team Leader and Rural Development Specialist                                  |
| - Mr. Bernd Bultemeier (German, FAO HQ - Italy)       | FAO Evaluation Manager  |
| - Mr. Mukelabai Ndiyoi (Zambian)                      | Team Leader, Beneficiary Assessment Study<br>– Farming Systems Specialist     |
| - Dr. Mick Mwala (Zambian)                            | Member, Beneficiary Assessment Study<br>– Capacity-building Specialist        |
| - Ms. Sepo Marongwe (Zambian, resident Zimbabwe)      | Member, Beneficiary Assessment Study<br>– Conservation Agriculture Specialist |
| - Ms. Shinga Mupindu (Zimbabwean)                     | Member, Beneficiary Assessment Study<br>– Gender and Food Security Specialist |

## 2.2 Background of FISRI

The Zambian Government has endorsed CA (policy) as one of its agricultural developmental vehicles for sustainable agriculture. The Ministry of Agriculture and Livestock (MAL) has a ten year strategy to implement the CA programs through the framework of Conservation Agriculture for Sustainable Development (CASAD). The Farmer Input Support Response Initiative (FISRI) I, II and III fit in this programme which will see the Government promote CA to over 600,000 farmers by 2015. The strategy includes working with the same farmers for a minimum of five years to allow consistency in the application of CA technologies and building the CA capacity of the farmer.

The FISRI I & II projects (2009 to-date) and the CASPP Project funded by the Norwegian Government (from 2009-2010) targeted 11,872 lead-farmers for training during the agricultural season of 2010 and 2011 (of which 3,920 through the EUFF project and 7,952 through FISRI II project in 28 districts).

The current project FISRI III, is aimed at increasing the adoption of environmentally-friendly farming systems leading to improved production from given inputs, increased food supply, reduced hunger and improved responses to food emergency crisis by extending the area of land under CA practices. In particular, the following specific problems would be addressed by this project:

- A lack of consistent application of best-practices in land and crop husbandry;
- A need to strengthen mechanisation since the current complement of tractors in Zambia is only 6,000 and the most efficient way to provide mechanisation services is through private agricultural contracting. It is estimated that a farmer would need to have 100ha to justify the cost of a new tractor on their own and this is well beyond the capability of the average Zambian smallholder farmer;
- A need to intensify capacity development in CA practices within camps instead of targeting additional districts and Provinces;

The FISRI III project aims to complement current existing efforts aimed at up-scaling Conservation Agriculture among small-scale farmers in Zambia. Due to unforeseen delays, FISRI III may now be extended to December 2012 (scheduled to end April 2012).

The stakeholders of the current project include: MAL, EC, ZNFU's CFU, GART, the Palabana Farm Power Training Centre, ZARI, University of Zambia, FAO and selected communities.

### 2.2.1 Objectives and Purpose of FISRI

There are at least 3 versions of the Log-frame in existence and it is unclear which version is approved for adoption and being adhered to for the purposes of project performance management. In summary, the following is perceived to apply:

The overall objective of FISRI is “to contribute to greater food security as a result of increased food production and more sustainable use of environmental resources”.

The purpose of FISRI is “to increase food production through improved access to agricultural inputs and promotion of CA principles in order to help mitigate the effects of soaring food and input prices”.

The FISRI project has 4 main output result areas (and 2 other output result areas identified), notably:

1. Increased capacity of MAL staff and lead-farmers to provide future extension support in CA to the beneficiaries in the country;
2. Inputs and equipment made available to lead-farmers and farm beneficiaries, including through the use of electronic vouchers and subsidies, and used in line with the training and extension provided;
3. Facilitation of farmer access to markets and e-voucher payment in order to strengthen commercialisation as a pull factor for production and increased farm incomes to ensure sustainability of CA systems:
  - i. Market information system enhancement through contracting AMAC and ZNFU commodity marketing systems services;
  - ii. Improved contracts between producer groups and buyers in order to increase the bargaining power of beneficiaries and to facilitate commercialisation of expected increased production;
  - iii. Expansion of existing e-voucher payment system for input procurement in terms of targeted beneficiaries and areas;
4. Support to CA mechanisation to scale-up technology adoption, increase the number of adopters and increase the area under cultivation through provision of agricultural mechanisation (tractors – 60hp; tractor-drawn CA implements and other similar equipment);
5. Effective institutional and governance framework enabling project planning, operation and sustained results;
6. Efficient and effective monitoring, reporting and lesson learning system in place;

### 2.2.2 Funding and Duration of FISRI

The three FISRI projects have all been financed from the European Union Food Facility (EUFF) instrument through standard contribution agreements between EC and FAO and the funding has been as illustrated in the table below:

Project	Budget	Implementation Dates	Implementation Duration
FISRI I	€7,472,052	01.05.2009 – 30.06.2011	26 months
FISRI II*	€3,578,904	02.05.2011 – 01.01.2012	8 months
FISRI III**	€5,800,000	01.07.2011 – 31.05.2012 - extended to 31.12.2012	17 months
<b>Total</b>	<b>€16,850,956</b>		<b>43 months</b>

\* Funded from unutilised EUFF, Bangladesh

\*\* Funded from unutilised Budget Support Programme, Zambia

Due to overlaps, the overall dates and duration of implementation of these projects is from 1<sup>st</sup> May 2009 to 31<sup>st</sup> December 2012 (with an effective extension of 6 months from 31.05.2012 for FISRI III) and a total of 43 months respectively.

## 2.2.3 FISRI Budget and Expenditure

	Budget	Commitments and Actuals	Available Budget	Projected Balance	% Total Budget	% Exp. to Total Budget	% Overall Current Exp.
5011 Salaries Professional (Parent a/c)	71,526	0	71,526	71,526	0.92%	0.00%	0.00%
5013 Consultants (Parent a/c)	330,303	183,169	147,134	147,134	4.27%	2.37%	5.70%
5014 Contracts (Parent a/c)	3,180,496	1,935,181	1,245,315	1,245,315	41.13%	25.02%	60.25%
5020 Locally Contracted Labour (Parent a/c)	13,707	13,855	<148>	<148>	0.18%	0.18%	0.43%
5021 Travel (Parent a/c)	267,681	113,060	154,621	154,621	3.46%	1.46%	3.52%
5023 Training (Parent a/c)	983,763	614,503	369,260	369,260	12.72%	7.95%	19.13%
5024 Expendable Procurement (Parent a/c)	342,020	122,015	220,005	220,005	4.42%	1.58%	3.80%
5025 Non Expendable Procurement (Parent a/c)	1,951,413	5,253	1,946,160	1,946,160	25.23%	0.07%	0.16%
5027 Technical Support Services (Parent a/c)	22,507	8,811	13,696	13,696	0.29%	0.11%	0.27%
5028 General Operating Expenses (Parent a/c)	64,000	40,381	23,619	23,619	0.83%	0.52%	1.26%
5029 Support Costs (Parent a/c)	505,918	175,517	330,401	330,401	6.54%	2.27%	5.46%
<b>Total Expenses</b>	<b>7,733,334</b>	<b>3,211,745</b>	<b>4,521,589</b>	<b>4,521,589</b>	<b>100.00%</b>	<b>41.53%</b>	<b>100.00%</b>

Table 1: FISRI Budget Utilization as of June 2012

The above table shows that highest expenditure (both planned: 40% and actual: 60%) is for contracts; these represent payments to implementation partners in MACO/MAL (from the Project Co-ordinator in Lusaka down to PACOs and DACOs in provinces and districts) for farmer training and field days, and to other implementation partners such as ZNFU, GART, MTZ for farmer training and the operation of the e-voucher scheme.

Training is the second largest expenditure item; this budget component seems to cover mostly expenditures directly incurred by FAO for the organisation of training events.

The most under-spent budget portion is Non-Expendable Procurement, but this is reportedly being addressed now (June 2012) with the preparation of a Procurement Plan.

The evaluation team did neither have the necessary mandate nor the expertise to probe into the financial procedure of FISRI – but it would appear that the transfer of large amounts of money to implementation partners calls into question the future sustainability of the approach. In addition, the accountability for the sums expended ultimately rests with FAO; the sheer number of transactions (>140 recorded between January and June 2012) would probably make it difficult for a small office such as the DRMU to exercise sufficient oversight and accountability.

## 2.2.4 Project Management and Technical Back-stopping

FAO has supported major Conservation Agriculture projects in Zambia since 2008; starting with (December 2008 to December 2010) the “Conservation Agriculture Scaling-up for increased Productivity and Production (CASPP)” project funded by the Kingdom of Norway, and then (May 2009 to June 2011), the “Farmer Input Support Initiative” project (FISRI I) funded by the European Union Food Facility. This was followed by FISRI II (May to December 2011) and FISRI III (July 2011 to April 2012, with possible extension to December 2012).

While FISRI I had a medium-term duration (2 years), the rapid succession and partial overlap of FISRI II and III resulted in a somewhat improvised, ad-hoc approach to project planning; likewise, the undefined status of FISRI III’s termination date (originally proposed for one year i.e. July 2011 to June 2012, but subsequently reduced to 10 months to end-April 2012, and yet latterly extended on the grounds of delays in implementation to end-December 2012) made for an uncertain project planning horizon, which may explain also some of the implementation difficulties and apparent project management weaknesses that were evident.

### 1. Efficiency of Coordination and Oversight arrangements<sup>9</sup>

From FISRI I, FAO was given “the overall co-ordinating role” for FISRI onwards, providing technical, logistical and operational support to MACO (later MAL) and serving as a liaison between MACO and the various partners involved in CA/CF initiatives.

<sup>9</sup> Assessing FISRI efficiency was not easy for the evaluation team; much of the background information documenting project activities (such as minutes of meetings, requests for administrative actions, etc.) was not available or delivered late and made it therefore difficult to assess the efficiency of operations.



Within MACO/MAL, the project was to be run by a National Co-ordination Unit consisting of a National Project Co-ordinator and two MACO technical officers (a field crop agronomist and monitoring and evaluation specialist<sup>10</sup>). This national unit was to ensure a co-ordinated approach within all levels of the Ministry down to district and camp levels.

A Project Steering Committee was established under FISRI I, chaired by the Permanent Secretary of the MACO, with members drawn from senior staff in MACO/MAL (level of Director), FAO, GART, the EC Delegation, Norwegian Government, other stakeholders such as CFU and the national representative of the African Conservation Tillage network (ACT), relevant non-governmental organizations (e.g. CARE) and other interested donors. The evaluation team has only had sight of one PSC Minutes (20.08.2011), and it is difficult to appraise the PSC functioning and effectiveness as a result.

A National Task Force on CA, chaired by MACO/MAL and facilitated by FAO, was to be the information-sharing platform where the project's results and lessons learned were to be disseminated to other stakeholders. Again, no records were available to the evaluation team and it is understood that this initiative is not actively pursued and is in effect dormant for some time.

In addition, FISRI III referred to the project as being “managed in two fronts”: (i) the National Co-ordination Team and (ii) the Technical Team. The National Co-ordination Team was to report to the Project Steering Committee in order “to provide Government resources to the project and to give policy direction” (Progress Report, October 2010). Two review meetings were reported to have been held in 2010; again, no records were available to the evaluation team. The Project Technical Team was to provide technical guidance to the project in its implementation. No records of technical team meetings were available to the evaluation team.

## **2. Project Management**

FISRI I suffered delays from late signing of the project document and consequently, delayed procurement of bicycles and computer equipment, while the FISRI III project document took longer than expected to materialise. In most cases, project management was able to catch-up with delays, and praise should be given for the expansion to new districts and new farmers in line with the expectations of the project document; but there were instances where training<sup>11</sup> was given late (and sometimes out of season for relevance), spare parts did not arrive and the e-voucher system (and, it appears, sometimes the whole FISRI approach) was insufficiently explained to new participants.

There have also been reports about delayed information flows regarding budget matters between the DRRMU (later DRMU) and FAO HQ, and in the past (until early 2012) there was also only limited financial monitoring by the FAO Representative, as the budget was held by the Emergency Division (TCE) at FAO HQ. In addition, many activities organised by MACO/MAL depend on funding made available from DRMU: this raises questions not only about the future organisation of these activities, but also about the transparency of the process, as funding of these activities appears to be authorised against blanket requests. In terms of project staffing, the roles and responsibilities within the DRMU could have been better defined: in particular the M&E Officer not only deals with the project's M&E system, but also acts as Communications and Reporting Officer.

## **3. Project Reporting**

FISRI's progress is not well reported, as there was insufficient and readily available evidence to demonstrate otherwise. Despite repeated requests, access to project progress reports, PSC minutes and other project reports/studies proved challenging (as no apparent basic organised system for electronic document storage and retrieval appears to be in place) – very few progress reports were available from FAO's FPMIS, and also other reports suffered long delays in hand-over (if at all). The project has claimed repeatedly in certain of its progress reports that an “efficient and effective monitoring, reporting and lesson learning system” was in place. However, this contrasts with the findings of two EU ROM missions in 2010 and 2011, which found the M&E system weak (although the 2011 ROM mission acknowledged progress being made), and also with an FAO audit of the overall country programme that came to the same conclusion.

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<sup>10</sup> It appears that the MACO/MAL M&E specialist retired in the course of project implementation and therefore did not deliver a full work programme.

<sup>11</sup> In September 2011 alone, more than 30 training sessions/workshops were charged to the project budget (all with budgets between US\$16,000 to US\$25,000); if these were actually implemented during the calendar month, it would represent a challenge for the project in terms of exercising oversight and quality control.

These judgments are endorsed by the evaluation team: the documentation on project progress made available to the evaluation team was fragmented (progress reports were present only for less than half of the participating districts, and sometimes not in the stipulated format), and often out of date (or undated). The latter aspect is highlighted by the delay in producing the 2010-11 Post Harvest Assessment: the report was not ready in February/March 2012 for the Beneficiary Assessment, and was only made available to the evaluation team on the day of the wrap-up debriefing – too late to be of use to the evaluation, but – more importantly – also much too late to be of any value in planning the 2011-12 campaign.

It appears that generally Post-Planting Surveys and Post-Harvest Assessments are published many months after the events they report on and also that their distribution is restricted to few recipients. These surveys also average data, which tends to distort the results achieved and does not allow for the identification of real case studies, as well as reasons for success or failure. Similarly, the monthly reports from the districts do not properly appear to have been analysed in a systematic fashion<sup>12</sup>.

#### 4. Technical Backstopping

Technical support arrangements in FISRI appear to have developed in an ad-hoc fashion: the LTO (two officers: one in AGS (Mechanisation) and one in AGP (Crop Production) according to FPMIS) were at HQ, but until 2012, technical backstopping visits seem to have come exclusively from the Technical Officer based in FAO's sub-regional office in Harare (SFS), while the FAO HQ-based LTOs provided some technical comments.

Technical backstopping on-the-ground was provided mainly through two international consultants, augmented by the FAO-based agronomist and M&E teams, though there is some evidence of parallel processes in existence between FAO and MAL in this regard. One international consultant in particular, came very frequently, perhaps partly as a substitute for CTA (refer **Annex 7.06** for details on inputs in terms of dates and mandays).

#### 2.2.5 Project Inter-relationships

The project had good relationships with existing projects. The CASP-CFU provided training services to FISRI beneficiaries while lead-farmers and follower-farmers obtained farm input support from the FISP. The ZNFU has established farmers associations in many districts in Zambia which serves members' needs, including efforts to provide market information and facilitate access to markets. FISRI did not directly address market issues preferring instead to leave the matter to the ZNFU. The ZNFU are also the managers of the Pilot Mechanisation component of the FISRI.

A brief look at FISRI and CFU implementation strategies of CA reveals marked similarities and differences, pointing to the potential for positive impact on crop production if synergies from such partners/interventions/initiatives could be harnessed through appropriate functional governance structures at MAL.

#### 2.2.6 FISRI-CFU Comparison

	FISRI	CFU
<b>1. General Characteristics</b>	<ul style="list-style-type: none"> <li>A public initiative by MAL, in partnership with the EU, funded largely from EUFF, but executed through MAL's broader programme on CA with FAO technical backstopping;</li> <li>FISRI eventually extended to 31 districts;</li> <li>FISRI (and MAL) perceive CFU as a 'competitor' and there is evident rivalry and perceived friction which serves to be counter-productive and potentially divisive if not curbed, as both are supposed to be focused on the same goal of promoting CA (as GoZ policy) and supporting development of the Zambian farmer in addressing food security, poverty alleviation and environmental protection, using climate-smart technologies;</li> </ul>	<ul style="list-style-type: none"> <li>This is a private initiative under the auspices of ZNFU, funded by the Government of Norway;</li> <li>Management is carried-out by a thin staff at HQ;</li> <li>The CFU operates in 11 districts only;</li> <li>CFU is often perceived as 'brash' and ambitious, often seen to be competing with FISRI for the same client-base, sometimes in the same districts. This evident rivalry and perceived friction serves to be counter-productive and potentially divisive if not curbed, as both are supposed to be focused on the same goal of promoting CA (as GoZ policy) and supporting development of the Zambian farmer in addressing food security, poverty alleviation and environmental protection, using climate-smart technologies;</li> </ul>

<sup>12</sup> FISRI's Lead Technical Consultant conceded in a Report (June 2012) that "... neither the project staff nor MAL staff could process all the reports from Camp Extension Officers into coherent M&E data".

<b>2. CA Best-Practice Approaches</b>	<ul style="list-style-type: none"> <li>To ensure that CA is carried-out effectively the project promoted the following technologies; <ul style="list-style-type: none"> <li>-Ripping/basin-making for land preparations, conforming to the CA principle of minimum soil disturbance while allowing for early planting</li> <li>-Crop rotation with emphasis on use of legumes: planting seed availability for legumes is a challenge</li> <li>-Crop residue management: to counter aspects of soil erosion and soil fertility (organic matter build-up)</li> <li>-Herbicide use for weed control: to conform to the key principle in CA, minimum disturbance to soil</li> </ul> </li> <li>To complement CA adoption, farm inputs provided include: <ul style="list-style-type: none"> <li>-Crop seeds promoted are those of cereals, including maize and legumes</li> <li>-Conservation Agriculture tools (rippers, chaka hoes, no-till planters) and equipment (tractors)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>CFU is the main source of most CA technologies that are promoted in Zambia, including those used in FISRI project and as such, the CA best-practices approaches are identical in design to those articulated under FISRI. There is however, a difference in the inputs provided to promote CA under CFU, in that maize and fertiliser are not given to the farmers to ensure that there is no competition with FISP; this has proven to be strategic in ensuring adoption of the CA technologies;</li> </ul>
<b>3. Lead-Farmer Approach</b>	<ul style="list-style-type: none"> <li>The lead-farmer concept is an innovative approach in extension service delivery. FISRI used this approach in the following manner: <ul style="list-style-type: none"> <li>o Lead-farmers were selected using a variety of criteria depending on the district visited, but common to all was that they must have been able to train other farmers;</li> <li>o Lead-farmers were viewed as part of the delivery system while at the same time as beneficiaries of the CA interventions via the project;</li> <li>o Lead-farmers were permanent and supported without reference to performance. This diluted the purpose of the lead-farmer concept with the beneficiary status being viewed to be more important than the facilitation function;</li> <li>o Support was given to lead-farmers in form of: <ul style="list-style-type: none"> <li>- Training (on CA aspects) with the idea that they will train a max. of 14 follower-farmers</li> <li>- Farm inputs through e-vouchers (US\$100-150, to purchase CA tools, seeds/herbicides and mechanisation services)</li> <li>- A bicycle for transport in mentoring the follower-farmers (a max. of 12 follower-farmers)</li> <li>- There was divergence as to why lead-farmers received this support, as noted from the field visits; A form of payment or a facilitation component for effective extension service delivery?</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><u>The lead-farmer concept was implemented differently and was performance-related.</u> A lead-farmer was selected on strict criteria of being a facilitator by example i.e. only those who showed they had passion to adopt CA were chosen. In this regard, only farmers who were practicing CA on a land area of 2ha+ were chosen. All 'facilitators' had to be able to train and mentor/motivate others, as was the case under FISRI;</li> <li>Lead-farmers were strictly facilitators who were paid for their services via e-voucher (US\$680 per season), subject to a performance review. Continued support of the lead-farmer was subject to maintaining good performance in the training and follow-up activities as spelt out in the agreement with CFU. Payment was withheld or withdrawn in cases of poor performance;</li> <li>Support to the lead-farmers was similar to the one under FISRI, however the e-voucher value was more significant as lead-farmers were expected to train/mentor in excess of 100+ farmers;</li> </ul>
<b>4. Participating/Follower-Farmer Approach</b>	<ul style="list-style-type: none"> <li>Participation of follower-farmers was by means of a 'closed' selection system, in consultation with community leaders, resulting in a max. of 14 follower-farmers being allocated to each lead-farmer. Follower-farmers constituted the ultimate beneficiaries of the project interventions, as they represented the farming society at large;</li> <li>On average, of the 14 follower-farmers selected to participate under FISRI, an average of 7 max. (50%) were deemed to be fully active and participating in CA, a further 4 (25%) were participating on an ad-hoc basis, with 4 (25%) not participating or dropped-out (due to the non-availability of e-voucher scheme inputs);</li> </ul>	<ul style="list-style-type: none"> <li>Participation of follower-farmers was by means of an 'open' selection system, based on public advertisements initially. CFU took the view that interested participants would graduate based on their level of interest and motivation, so numbers were not restricted. On average, a lead-farmer could have 100+ farmers assigned to him/her for mentoring and training.</li> <li>On average, of the 100+ follower-farmers eligible to participate under CFU, an average of 40 max. (40%) were deemed to be fully active and participating in CA, a further 35 (35%) were participating on an ad-hoc basis, with 25 (25%) not participating for a variety of reasons;</li> </ul>
<b>5. E-Voucher Scheme Approach</b>	<ul style="list-style-type: none"> <li>FISRI provided e-vouchers to lead-farmers to facilitate adoption of CA technologies and the e-voucher was a facilitation means as well as a 'payment' mechanism, though it was not clear from the recipients why they were receiving the e-vouchers;</li> <li>The e-voucher scheme was not performance-based and payments to lead-farmers were not indexed, were not graduated and were not subject to rigorous assessment to determine value-for-money and impact, linked to performance management criteria;</li> </ul>	<ul style="list-style-type: none"> <li>Clearly the e-voucher scheme deployed was a payment to the lead-farmer for the mentoring/training services rendered to the participating farmers. It was clearly devised as a performance-based scheme, where payment was graduated and phased, linked to specific performance and completion of agreed tasks, with sanctions and non-payments applied for poor performance;</li> </ul>



<b>6. Mechanisation Approach</b>	<ul style="list-style-type: none"> <li>Recognised as an important input into adoption of CA technologies, mechanisation was included in the FISRI project with the facilitation of the project; that is the project provided a credit line for the private sector to acquire equipment and to the farmers to access the services. No linkage was made with any financial institution;</li> <li>This approach was appropriate for the stage of growth of the Zambian agriculture as credit is expensive and very difficult to access, but is non-sustainable;</li> </ul>	<ul style="list-style-type: none"> <li>Mechanisation was also an important component of CFU but was left entirely to the private sector, implying that the growth of mechanisation would be responding to the demand and supply equation regarding mechanisation;</li> </ul>
<b>7. Capacity-building &amp; Training Approach</b>	<ul style="list-style-type: none"> <li>The training programme under FISRI was not articulated in any main document and was not effectively centrally planned/co-ordinated, with the result that district-level training was often ad-hoc, haphazard and sometimes out-of-season, affecting its relevance and impact. Technical input was provided by CFU to: <ul style="list-style-type: none"> <li>- All levels of MAL structure</li> <li>- HQ and provincial staff on M&amp;E aspects</li> <li>- District staff on CA principles and general M&amp;E aspects</li> <li>- Camp staff on CA technologies</li> <li>- Lead-farmers only, training on CA technologies</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Intensive lead-farmer (co-ordinator) training was accompanied by a 'training kit' used during training sessions, facilitating provision of quality training to farmers in a well-planned exercise constituting: training material preparation (responsive to training needs), delivery, follow-up, feedback/re-planning. There was evidence of planned-capacity-building approaches;</li> <li>Training covered CA technologies, aspects of farm management and marketing, with lead-farmers leading by example through effective demonstration effect;</li> <li>Internal/external assessments of training interventions were employed to gauge 'value for money'. Feedback via re-planning sessions was followed for relevance/effectiveness of training;</li> </ul>
<b>8. Gender Mainstreaming</b>	<ul style="list-style-type: none"> <li>There was perceived to be poor integration of gender issues in FISRI as gender mainstreaming was not incorporated into the project design and no OVIs existed in this regard to achieve gender disaggregated data/information;</li> </ul>	<ul style="list-style-type: none"> <li>Gender issues were not evident during the brief engagement with CFU, though there was field-based evidence of leadership roles for women in the CFU programme;</li> <li>CFU adopted a process of gender disaggregation in its data analysis and information reporting;</li> </ul>
<b>9. Market-orientation Aspects</b>	<ul style="list-style-type: none"> <li>ZNFU was mandated by FISRI to engage with farmers in improving market information, market-trade linkages and access to market aspects, though there are mixed results, particularly as ZNFU tended to interact with the lead-farmers and not with the follower-farmers. MAL also deployed a 'market' official at district level, though in most cases, this was perceived as ineffective or concentrated on maize market aspects;</li> <li>Farmers consistently expressed concern with the marketing of their produce, expressing doubts about where to turn for support and guidance. There was field-based evidence of harvested crops laying in the open and no identified buyer/market being evident, especially for non-maize crops;</li> </ul>	<ul style="list-style-type: none"> <li>There was evidence of CFU farmers being exposed to market aspects and being more 'switched-on' to where to source information and to whom to turn for guidance and support. ZNFU was again a partner in this process;</li> </ul>
<b>10. Partnerships and Linkages - Research &amp; Education</b>	<ul style="list-style-type: none"> <li>FISRI had limited linkages with the R&amp;D domain though it was supposed to develop closer linkages with GART and ZARI, both being represented on the PSC. A major opportunity was lost in documenting and laying the foundation for on-going empirical research on CA through FISRI;</li> </ul>	<ul style="list-style-type: none"> <li>CFU was linked very closely with the R&amp;D domain through its linkage with GART, which it continues to build;</li> </ul>
<b>11. M&amp;E and Reporting</b>	<ul style="list-style-type: none"> <li>There was no evidence of a functional and effective M&amp;E framework that was followed at district level, that was to have been supported by MAL structures and FAO technical backstopping, both of which have apparent deficiencies and appear to be parallel systems;</li> <li>M&amp;E aspects were identified as problematic in both ROM assessment reports, but deficiencies were not adequately rectified;</li> </ul>	<ul style="list-style-type: none"> <li>An elaborate M&amp;E framework was followed, supported by internal/external input. The internal mechanisms ensured relevance through feedback into the planning process. External mechanisms were for transparency/accountability purposes;</li> <li>As there was no focused evaluation of CFU, no specific documents were sourced nor provided, rather this was via discussions;</li> </ul>

<b>12. Project Management and Technical Backstopping</b>	<ul style="list-style-type: none"> <li>• There were three layers of management: through MAL, through FAO and the third through the joint platform, the PSC, with evidence of possible parallel systems existing between MAL and FAO;</li> <li>• Technical backstopping was provided by FAO;</li> </ul>	<ul style="list-style-type: none"> <li>• Few HQ staff, supported by enthusiastic field staff. As a private set-up, CFU management could be said to have been efficient and effective judging by the funds it consistently attracted from the donors;</li> <li>• Technical backstopping was an internal arrangement by the CFU and appeared effective: it should be noted that CFU was bound to be efficient in this regard as this was the only aspects they focused on, unlike under FISRI where the CEO had many other issues that they had to take care of beyond the CA promotion;</li> </ul>
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Refer **Annex 7.7** for a brief overview on Conservation Agriculture Best-Practices as it applied to FISRI.

Refer **Annex 7.8** for a brief overview on Lead-Farmers and Follower-Farmers in FISRI.

Refer **Annex 7.9** for a brief overview on Capacity-building and Training in FISRI.

Refer **Annex 7.10** for a brief overview on the E-Voucher Scheme and Mechanisation Pilot Initiative in FISRI.

Refer **Annex 7.11** for a brief overview on Gender Mainstreaming and Food Security in FISRI.

## 3.0 Evaluation Synthesis

Where the evaluation ratings applicable are as follows:

- 1 **Highly Satisfactory** (i.e. fully according to plan or better)
- 2 **Satisfactory** (i.e. on balance according to plan, positive aspects outweighing negative aspects)
- 3 **Less Than Satisfactory** (i.e. not sufficiently according to plan, taking account of the evolving context; a few positive aspects, but outweighed by negative aspects)
- 4 **Highly Unsatisfactory** (i.e. seriously deficient, very few or no positive aspects)

Using the standard DAC evaluation criteria, the following aspects are identified:

### 3.1 Relevance (Problems & Needs)

The relevance of a project/programme relates primarily to its design and concerns **the extent to which its stated objectives correctly address the identified problems or real needs**. It needs to be kept under review throughout the life of the project/programme in case changes occur either in the nature of the very problems originally identified, or in the circumstances – whether physical, political, economic, social, environmental, institutional or policy – in which the project/programme takes place, necessitating a corresponding change of focus. In other words, relevance concerns the appropriateness of the project design to the problems to be resolved at two points in time: when the project was designed and, at the time of the evaluation.

Assessment of FISRI under the Relevance criterion is analysed under the following headings:

#### 3.1.1 Conservation Agriculture ‘Best-Practice’ Approach

The targeting of small-scale farmers makes the project very relevant to the Zambian situation as these farmers produce more than 80% of the country’s food requirements. CA also addresses the major problems faced by these farmers, i.e. low yield due to increased land degradation and high cost of fertilisers through enhancing and improving soil fertility and more efficient use of both inorganic and organic fertilisers. The ability of the project to introduce the mechanisation components reflects the project’s response to changing situations in terms of the increasing needs of farmers.

International best-practices in CA, like the increased efficiency in using fertilisers and manure and the use of legumes for soil fertility enhancement respond well to the increased prices for these inputs. The resulting efficiency in production will impact positively on profit margins, therefore addressing produce market price distortions.

The FISRI objective of contributing to increased food security through implementing CA fits well with the theme of “sustained economic growth and poverty reduction” expressed in the Sixth National Development Plan, which is expected to be achieved through the acceleration of poverty reduction by focusing on agricultural productivity. The country’s CAADP Compact, which provides the framework for the NDP also highlights poverty reduction strategies that includes diversification of the agricultural sector and reducing the vulnerability of the population to economic and climatic shocks, recognising the threat that poverty, chronic hunger and malnutrition pose to the current and future productivity of the country. Developing agricultural production systems that ensure the sustainable use of Zambia’s natural resources is also emphasised in the Zambia CAADP Compact (ZCC) and the National Agricultural Policy whose specific objectives include ensuring national food security, while maintaining and improving the existing agricultural resource base.

CA aims to increase productivity, while conserving the environment, also contributes to reducing global challenges of variability in precipitation and temperatures brought about by climate change, thereby contributing to ensuring food security. The practice of CA has ensured timely planting and more efficient use of fertility enhancements, which in turn ensure increased production and food security. The efficiency in using fertilisers and manure addresses the high cost of agricultural inputs. The project therefore, also responds well to global issues on sustainability and climate change.

The introduction of herbicide use, though relevant in addressing labour constraints faced by smallholder farmers, needs to be done cautiously and not as the only option. Other weed management strategies should be considered in order to cater for farmers with varied resource endowment and for environmental sustainability.

#### 3.1.2 Lead-Farmers and Participating (‘Follower’) Farmers

The extension model used was that of the Lead-Farmer. This model was relevant to the Zambian situation given the low staffing levels in MAL and the high attrition rates. This model adds a layer of community extension workers called the lead-farmer, below the Camp Extension Officer (CEO).

The CEO interfaces with the ultimate target, the participating farmer, through the Lead-Farmer. The appreciation of the role and responsibilities of the CEO was mixed. For example, the application of the e-voucher received by the CEOs varied between camps. This ambiguity about the role of the e-voucher is reflected in the quality of the demonstrations at their camps which were not configured to cater for large numbers of visitors.

The performance of the lead-farmer approach calls for closer scrutiny. There is a growing discontent between the lead-farmer and follower-farmers, a consequence of e-vouchers received by the lead-farmers and not by the follower-farmers. The FISP and FISRI could have been better synchronised so that follower-farmers receive FISP inputs, as is the case in some districts. Given the perceived discord between the lead-farmer and the follower-farmers, a careful examination is required to establish where the benefits of the e-voucher for the lead-farmer fall. If the benefits are the heightened appreciation of CA leading to adoption onto the full field, and the corresponding despondence of the follower-farmer, then a system of rotation or graduation of the lead-farmers is strongly recommended.

The expansion or replication pathway for the lead-farmer model of extension is in danger of stalling. The discord between the lead-farmer and follower-farmer is palpable. Some new camps to which the programme has expanded do not have follower-farmers due to the conflict over e-vouchers and availability of bicycles which lead-farmers have and follower-farmers do not. Overall, the number of follower-farmers is lower than planned, as often an average of 8 (out of the 15) are actively or purposively involved in the project activities. In this regard, the e-voucher does not sit well with the lead-farmer concept and may be an obstacle to the linkages between the lead-farmer and the follower-farmer, quite the opposite of what it was meant to be.

### **3.1.3 Capacity-building and Training**

In Zambia, the conventional crop cultivation practice involved the plough and complete working of the soil. Issues of soil erosion, inefficient use of scarce and costly resources (fertiliser, seed, labour and others) associated with the use of the plough called for adoption of alternate crop cultivation practices and CA was identified as one. The fact that CA is a 'cocktail' of technologies, its impact requires that adoption was all inclusive, that is, all components needed to be adopted so as to derive optimum benefits from their interactions. To ensure this, training on the CA individual components and their interactions was critical.

In this regard, FISRI inclusion and embarking on training as guided by objective 1 which targeted MAL staff, service providers, agro-dealers and farmers provided for the CA components to be fully appreciated, thereby enhancing chances of positive impact on food security through CA adoption by farmers. MAL staff, service providers, agro-dealers and farmers were all included in the various training events during the FISRI implementation pointing to the relevance of the project being satisfactory.

### **3.1.4 E-Voucher Scheme and Mechanisation**

Both the e-voucher scheme and the mechanisation pilot were highly relevant to the Zambian situation. The e-vouchers enabled the real time demonstration of the application of the CA technology in the Zambian private sector input supply system. The mechanisation pilot demonstrated to the Zambian government and financiers that small-scale farmers can demonstrate payback for machinery financed through carefully managed loan schemes. The two aspects of the project were very successful owing to their meeting a felt need within the agricultural sector.

The main targets of the e-voucher and mechanisation schemes were the lead-farmers and CEOs. However, the benefit accrued to various members of the extension chain: The MAL (national-level and district-level) had an agricultural practice they could demonstrate at scale; Lead-Farmers could experience the purchase and application of inputs and implements for the practice of CA; Follower-Farmers had an opportunity to learn by seeing what the lead-farmers and the CEOs were practicing with the aid of the e-vouchers; finally, Agri-Dealers and Agri-Contractors were able to operate and, in some cases, expand their business due to the e-voucher scheme.

Agro-dealers and the e-voucher scheme have given rise to an emerging competition amongst agro-dealers which is contributing to an environment of fairer prices for farm inputs. Despite this positive development, there are concerns about reported differences in prices between e-voucher and non-voucher shops during the e-voucher season. E-vouchers have demonstrated their relevance as they greatly facilitated access to inputs and CA implements thereby making it possible for farmers to experience the application of CA at relative scale.

The CA mechanisation pilot was key to the up-scaling of CA. Mechanisation, in conjunction with herbicides, has changed the way constraints are viewed on smallholder farms. The pilot was relevant but this was dwarfed somewhat by the sheer demand for the service. If mechanization is to be increasingly promoted in the future then it ought to be undertaken in greater scale. The first season with 10 tractors has demonstrated that the demand far outstrips supply and that queuing-up for the service resulted in some farmers reverting to conventional farming.

### **3.1.5 Gender Mainstreaming and Food Security**

The FISRI project is relevant to the needs of women and men, particularly with respect to staple food availability. Food access is a practical gender need for women as they have the gender role for food preparation and provision for the family. The relevance of the project for women was affected by the lack of clear definition of gender outcomes and indicators in the FISRI project design. In FISRI, smallholder farmers are taken as a homogenous group, but in reality, female and male farmers have different needs, power dynamics, roles and responsibilities in CA processes. Although gender and women empowerment (GEWE) is given priority in the SNDP, FISRI has not deliberately and systematically planned for GEWE at project design stage and during project implementation (over FISRI I-III). Whilst lead-farmers are one of the key players in the project, the selection criteria can be perceived to have been biased against women, with consequently 28% of the lead-farmers being women despite the fact that women are the major food providers for households. Relevance of the project to women has been somewhat compromised by the lack of consideration of the differential social and gender relations between women and men.

The introduction of mechanisation and herbicides in CA processes is relevant for women because they are predominantly involved in the preparation of hand basins and in undertaking hand weeding. However, fewer women compared to men (22-25%) benefitted from mechanisation. All tractor and ox-drawn rippers which were provided on a loan basis were given to male lead-farmers, none were provided to female lead-farmers.

In terms of Food Security, FISRI has enabled households to have adequate food and dietary diversification through the following of CA principles. However, the project design has not integrated other important food security components such as food storage, nutrition, food safety, food conservation, food consumption and value-addition. These could have augmented the project's food security relevance.

### **3.1.6 Market-orientation and 'Commercialisation'**

CA demonstrably increases production yields for smaller and mid-sized farmers, and this was demonstrated in FISRI (if not adequately recorded), but increased production yields alone will not address the food security and poverty alleviation strategies of Zambia. There is however, a danger of concentration on a production-focus (particularly for planned commodities such as maize and soya) at the expense of a wider market-focus on the needs of local and regional markets (for legumes and other cash crops). This in turn, identifies the urgent and critical need for proactive and updated market information and facilitation of legitimate market linkages that serve the interests of smallholder farmers and protects them from unscrupulous market intermediaries who are intent on taking advantage of their current levels of ignorance of market forces and price/quality requirements.

ZNFU was identified under FISRI as the main interlocutor between the project and the beneficiaries to develop a market information system and to facilitate linkages between willing sellers and buyers, which was relevant and acceptable. However, there is much evidence of follower-farmers in particular, not being sufficiently aware and informed of market prices, market channels and their capacity to actively promote and sell their produce on time and for a fair price. It is also evident that many small-holder farmers were either not aware or were not sufficiently literate and/or confident enough to self-initiate fact-finding on market prices and channels without proactive ZNFU support. While it is acknowledged that ZNFU is active in sharing market information (on prices and trends) and facilitated development of market linkages in some cases, its efforts were not universal and not proactive enough, where many small farmers were not aware of what information is available, where to source it and how to interpret it. ZNFU needs to be more proactive and guiding in its representation of its members (to avoid unsuspecting and ill-informed farmers from being unscrupulously taken advantage of by more sophisticated 'institutional' buyers).

In tandem with improved MIS and enhanced market linkages, there is a need to organise the many smallholder farmers into 'umbrella' producer-marketing groups initially (to create economies of scale/scope, to enhance negotiating/seller power and improve capacity-building), but inevitably, this initiative would need to evolve and move more towards the formation of 'commercial' co-operatives that are established to serve the immediate as well as the longer-term interests of its members (notably, the smallholder farmer members).



Issues such as sourcing of inputs at reasonable cost (achievable through bulk-buying and improved purchasing power), establishing machinery/equipment pools (owned and maintained by the co-operative at basic cost), provision of storage and distribution facilities (to counter gluts and price volatility) will enable smallholder farmers to address typical market challenges and improve ability to de-seasonalise production patterns.

Value-addition has not been addressed within FISRI at either local level and/or national level. This is important in order to avoid a reliance on commoditisation, for maize in particular (which is a regulated market) and oriented to larger commercial producers. Allied to the promotion of the growing of alternative cash crops such as sunflower and legumes, the promotion of value-adding activities at local community-level such as basic grading/sorting/packaging (and in some cases, branding/labelling) of produce would achieve greater potential for product differentiation and increased market prices at local markets and at regional wholesale and city-based markets. However, basic processing activities can achieve higher economic returns and contribute to food security/nutrition through basic processed products such as sunflower oil, which can be produced at community level with minor investment outlay.

Overall, there is need for greater supply and value-chain linkages to be developed and promoted and ZNFU has a major role to play as intermediary (in terms of matchmaking and capacity-building, awareness-raising and mentoring) of its smallholder constituency base. Ultimately, a move away from pure commoditisation to increased value-added and branded produce has the potential of creating local economic development and enhanced employment creation possibilities at local community level.

The innovations introduced under FISRI in terms of the e-voucher scheme and the pilot mechanisation initiative both served to promote greater market access to inputs, such as seeds, fertilisers, herbicides, equipment and ox-drawn and tractor-drawn ripping/spraying services. In turn, this served to extend the outreach and network of agri-dealers and agri-contractors, improving access to certain commercial services to relatively remote rural areas and promoting basic commercial transactions and an initial introduction to market forces to smallholder farmers (as outlined in 3.1.4 above).

### **3.1.7 Project Design, Oversight and M&E Issues**

FISRI was initially designed as an ‘emergency’ project funded from the EUFF, to assist in addressing the challenges of rising food and input prices and augmenting food security over a planned 2-year period with a budget of €7.472m commencing in May 2009. Specifically, FISRI was broadened to not just focus on input supply, but to build on on-going emergency projects that were also tackling the persistent drought, occasional floods and recurring soil erosion that resulted in very low yields. As CA farming approaches were trialled in Zambia since the late 1990s and FAO Emergency Programmes (before FISRI) were supported by project implementers and donors to promote and scale-up conservation farming, it was seen as a logical approach to give FISRI a concept that was also strongly backed-up by FAO technical divisions, focusing on sustainable production intensification and more specifically on CA. Based on its perceived success under FISRI I, additional funding of €3.579m was made available in May 2011 from the EUFF, extending project activities under FISRI II by 8 months to December 2011. A subsequent tranche of unutilised funds under the EU-Zambia Budget Support Programme in the amount of €5.8m was made available in July 2011 under FISRI III, extending the project further by 11 months to May 2012, but this has since been further extended to December 2012 due to delays in project implementation (and non-utilisation of the allocated funding).

Overall, in terms of project design, FISRI is very relevant to the Zambian situation and broadly, the project design is a good reflection of the need in terms of promoting the adoption of CA principles coupled with innovations such as making inputs available through the mechanism of the e-voucher scheme and the subsequent introduction of a pilot mechanisation initiative. However, in terms of project design, FISRI I-III has experienced an unplanned and ad-hoc programming process, resulting in an extended ‘emergency’ implementation situation over 3 iterations and extending to 43 months overall, which has had a knock-on effect on project implementation modalities and on the effectiveness of project management and M&E.

As regards M&E, the log-frame identified the requirement for an “efficient and effective monitoring, reporting and lessons learning system in place”, relevant to introduction of a CA-focused emergency-oriented project, to be implemented over two years. In reality, M&E and reporting was not effectively addressed, partly due to the ‘emergency’ nature of the project design<sup>13</sup> and the ad-hoc extensions of FISRI.

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<sup>13</sup> FAO Monitoring Toolkit specifies ‘basic’ and ‘preferred’ (more advanced/detailed) monitoring standards to be applied

Whether related or not, the project design has also limited relevance and effectiveness in terms of Gender Mainstreaming, where the role and importance of identifying women in CA was not addressed and as such, the focus on women's inclusion as lead-farmers in particular, and as follower-farmers was not stipulated. This may have had a limiting effect on their participation as lead-farmers, thereby affecting access to the e-voucher scheme and similarly, in their participation in the mechanisation pilot. The participation of women in the field demonstrations and other relevant capacity-building and training initiatives could also be seen to have been less intentional and more ad-hoc, as a result.

Overall, based on all of the factors outlined above, this criterion is assessed as:

A rating of: **2** or **Satisfactory** (i.e. on balance according to plan, positive aspects outweighing negative aspects)

## 3.2 Effectiveness (Achievement of Purpose)

The effectiveness criterion, in log-frame terminology, concerns how far the project/programme results were used or their potential benefits were realised – in other words, whether they achieved the project purpose. The key question is: What difference the project/programme made in practice, as measured by how far the intended beneficiaries really benefitted from the products or services it made available.

Assessment of FISRI under the Effectiveness criterion is analysed under the following headings:

### 3.2.1 Conservation Agriculture 'Best-Practice' Approach

Results from the Post-Harvest Surveys (2010 and 2011) show significantly higher yields in CA fields compared to conventionally ploughed fields. These yield advantages were echoed by farmers in the project districts visited. However, the full potential for CA may not have been realised in most instances due to partial implementation of the CA concept (as not all of the three core principles were applied).

FISRI did make a difference in that farmers were able to benefit from the individual CA components that they applied and the 'best agriculture practices' that arise from implementing CA e.g. timely planting, more efficient use of fertilisers and manures, use of legumes in rotations for fertility enhancements among others. The challenges that may have affected the effectiveness of FISRI, mainly in influencing the follower-farmers, was the diminishing role of the lead-farmer as a result of the resentment developed by the follower-farmers who were not covered by the e-voucher scheme. The quality of some of the demonstrations may also have impacted negatively on the target group, in this case the follower-farmers, who were meant to benefit from the demonstrations. It was also difficult to confirm the number of active follower-farmers as monitoring of these was very limited.

The poor documentation of the success stories in the form of publications and limited interaction and feedback from beneficiaries has limited the impact of the best-practices emanating from CA implementation in the project.

The approach to exclusively promote herbicide and manual weeding as the major weed management strategies may not be very sustainable. An integrated weed management strategy would have been more effective as this will allow those farmers who cannot afford the herbicide to still adopt CA. Excessive use of herbicide may result in over-dependence and trigger resistance to the herbicide by certain weed species. The use of mulch, rotations and correct plant population should have been promoted as alternative and potential weed management options. In the current scenario, there is a danger of equating CA to herbicide use.

The direct involvement of FISRI with the districts ensured that the implementing officers, in this case the CEOs, benefit from project support in terms of training and other resources. This could have enhanced the effectiveness of the project if adequate monitoring systems were put in place.

### 3.2.2 Lead-Farmers and Participating ('Follower') Farmers

FISRI made a significant difference in the practice of the lead-farmer, but did not perform as well in permitting the follower-farmer the opportunity to learn as this farmer was pre-occupied with not receiving inputs for maize growing. The practice of CA by the lead-farmer was effective in stimulating demand beyond the limited amount of inputs on the e-voucher scheme as the farmers bought other inputs for cash. Secondly, farmers outside the programme have bought inputs for cash, such as herbicides, resulting in demand for herbicides moving from 300 to 3,000 litres in 3 years. The lead-farmers have shown an increase in yields above the farmers not practicing CA. The effect of the lead-farmer on the follower-farmer is not clear.

The challenges have been the discomfort the follower-farmer feels for the apparent denial of the e-voucher for inputs. The strained relationship between the lead- and follower-farmers makes the adoption by the follower-farmers constrained. Adoption is still hampered by the lack of access to e-vouchers among the follower-farmers who strongly feel they were unfairly denied membership of the e-voucher scheme. Weeds have been the major barrier to adoption of CA, but the introduction of herbicides has opened-up CA to many farmers. In these initial stages there are areas of knowledge and skills that need attending to and these issues will continue to be important in the next 5 five years.

Follower-farmers are essentially ‘club members’ without benefits. FISRI is seen as a source of support for members. There is a growing division between lead- and follower-farmers because of this apparent exclusion from the perceived benefits of the project. The district extension officers have explained that the lead-farmer demo is for all follower-farmers to learn from.

The extent to which the members of the chain, from the district to the lead-farmers, are fully facilitated to support the follower-farmer is unclear. Constraints in the availability of fuel for the CEOs or inputs to hold a complete farmer field school may lower the effectiveness of the intervention.

### **3.2.3 Capacity-building and Training**

Training was aimed at various levels and at MAL staff level and it was evident that substantial exposure to CA and related aspects was accomplished. District and field staff met were articulate on CA technologies, though no evidence was provided of the training events carried-out in terms of training materials and records. Reported training of service providers was limited in numbers and quality due mainly to the late arrival of tractors and their accessories for the 2011/12 crop season. Nonetheless, reported results of this intervention pointed to farmers benefitting from the services, with challenges related to timing of land preparation and planting operations. Though not the main target for training, the agro-dealers received adequate exposure regarding the e-voucher redemption process that enabled them to participate in the project more effectively.

Where training for the farmers was reported, it was for a very short period and covered limited topics to effect any impact. Mostly, these interventions were unplanned (not responding to felt training needs) and of too short duration to have imparted the desired effect on the targeted participants. The practice of CA at the farmer level, especially at participating-farmer level, did not reflect any training intervention at this level. The focus on activity-based training without conceptual aspects being included could explain the partial adoption of CA, thereby negating the expected full CA benefits. Farmers could rip or make basins but not use herbicide or exercise any crop residue management, rather cultivated in a bid to manage weeds.

Deployment of lead-farmers and demonstration effect, while effective, could be improved further though greater performance-based approaches and wider involvement of participating-farmers.

### **3.2.4 E-Voucher Scheme and Mechanisation**

The impact of the e-voucher scheme on agro-dealers has been remarkable for many reasons i.e. from selling seed, vet drugs and fertilisers, some agro-dealer have expanded to CA implements and inputs such as herbicides, ripper assemblies, chains and sprayers. The e-vouchers have allowed agro-dealers to expand to other districts and increase their outreach. Resulting from the higher sales during the e-voucher season, the voucher shops tended to embark on an expansion programme.<sup>14</sup> Similarly, the mechanisation was well received but effectiveness was dwarfed by the late start and the limited scale of the mechanisation pilot.

The potential of both the e-voucher scheme and the mechanisation pilot has been amply demonstrated. The e-voucher is highly desired by farmers, even for other programmes like the FISP, as it is perceived as a contribution to a reduction of corruption through improved transparency. The mechanisation pilot was equally over-subscribed and its potential is adequately demonstrated. Due to the late start of the mechanisation pilot the effect was not pronounced and often the full menu of mechanisation was not served due to limited time. The availability of ripping by tractor will not only speed planting but also break the plough layer. The difference from own-drawn rippers compared to conventional or basins is not well established. The factors that describe the technologies such as plant populations still need to be studied.

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<sup>14</sup> The case of the Kaoma agro-dealer who was opening another outlet in Senanga and TBZ in Kaoma; there is currently no agro-dealer in TBZ nor Senanga. The case of Kumawa in Chipata that has outlets in Petauke and Chongwe).



For a long time, development workers lacked the means to show in real life the way the models, equipment, systems of production etc. were working. The market did not stock the items because there was no demand, and the farmers could not demand it because they were yet to be convinced. The e-voucher scheme has been able to address the two needs simultaneously. Certain herbicides have been known to small farmers or extension for a long time but not to the extent of actually using the herbicides. What the e-voucher scheme has done is to put the herbicides to work on a large-scale and on many farms. The spike in demand for herbicides attests to the effective contribution of the e-voucher and the demonstration effect of the lead-farmer as many purchases were by cash and by farmers outside of FISRI.

The e-voucher scheme is thus recommended for out-scaling where the need to demonstrate the solution to a felt need is necessary. In FISRI, the e-voucher scheme was tied to the teaching role of the lead-farmer and CEOs. In this role, the e-voucher enabled a demonstration of the CA technology components to all. Whether it has had the desired impact on the ultimate target group i.e. the follower-farmer is open to question until the project collects appropriate data on this group. This is strongly so because the follower-farmers are despondent for not having received the e-voucher. They are also the least reported beneficiaries.

The agro-dealers are generally content with the FISRI programme. Some agri-dealers report that the e-vouchers account for over 70% of sales. Challenges experienced by agri-dealers are varied but the common challenge is the frustrations encountered when vouchers fail to be redeemed for a variety of reasons. Other problems are:

- i. Input availability—items such as chaka hoes are sourced from Zimbabwe by one company only. Agro-dealers do not have the leeway to source on their own. Other implements are the rippers and tines. In the absence of these items, some agro-dealers have substituted them with spares, sprayers etc.;
- ii. When they arrive at the agro-dealer, some farmers appear not to know what they want while some come very prepared after having earlier sent a reconnaissance survey over prices and availability of items. In some districts, up to 90% of farmers top-up the e-vouchers to get their required inputs or equipment. However, the amount of top-up is often small averaging at 2.85 at most;
- iii. Agro-dealers face pressure to sell items not listed on the e-voucher. Farmers may argue that they do not need to buy a chaka hoe because they bought one the previous year. This encounter has led agro-dealers to suggest that the farmers be rotated to permit other access to CA implements<sup>15</sup>. Alternatively, the e-voucher should include other inputs aimed at augmenting the CA practice such as attention to soil health;
- iv. The e-voucher redemption process started 30 days later than last year thereby restricting the window of execution. The procurement process requires ample notice time. A larger window of redemption would give the dealer and the participating farmers time to plan their purchases;

In the face of alienation of the follower-farmers and the loss of the demo at out-scaling in-farm, the justification for keeping the lead-farmer is diminished. Instead, the best performing follower-farmers should be picked every two years so that members of a group know they have a chance to access the e-voucher<sup>16</sup>. Even better, each member of a study group may have an equal chance of hosting the e-voucher by randomly selecting an e-voucher recipient every two years. Other forms of non-voucher incentives should be considered, for instance the farmer could receive certification to prove they have attained a yield level above 5 tons per hectare while using CA. Such certification would indicate that the farmer is less vulnerable to weather changes and therefore, attractive to financial institutions who may find it less risky to extend seasonal loans to such farmers. The fact that CA practice should confer preference for loans should be a stronger but neutral incentive limited only by the level a farmer dedicates to CA practice.

### 3.2.5 Gender Mainstreaming and Food Security

The log-frame did not provide for gender-based outcomes and indicators. There was no definition of the intended purpose or results of the project with respect to gender equity issues. The M&E systems did not provide for gender disaggregated data or collection of gender qualitative information. Although there is no documented information on gender dimensions in the project, discussions reveal that the project contributed to attaining of women's strategic gender needs of leadership for those women who were chosen as lead-farmers.

<sup>15</sup> CA takes long; effects may not show in one year. The voucher does not permit a farmer to buy all the equipment at once—it is expected that the farmer would start with the priority instrument and build the full complement over time.

<sup>16</sup> The NPC advises against rotation for fear of witchcraft

Although they were fewer women compared to men who were chosen as lead-farmers, the few who have participated have provided services to female and male farmers. This has boosted the participating female lead-farmers' self-esteem. Women's leadership as lead-farmers has been accepted by female and male farmers in the farming communities. Some women have diversified their CA produce with other income earning activities.

FISRI has improved food availability and access, especially the staple food. However, food security goes beyond staple food self-sufficiency because this largely ignores (market/household income) access issues as well as issues of nutritional quality and acceptability of food available and consumed. FISRI has not paid enough attention to food conservation/processing or value-addition which can provide for safe and nutritious food availability throughout the year.

Challenges encountered by women stem from their marginalised and disadvantaged position in society where time-consuming and physically demanding tasks such as hand basin making and weeding are ascribed as women's roles by society. However, when the tasks are mechanised, made easier and commercialised, men take-over and women become increasingly side-lined. Women are not predominantly active in the marketing of CA products and they do not have any discernible decision-making role on the proceeds of the sales.

Thus, women have challenges in accessing and controlling the benefits from their labour, especially in some male-headed households. Cases of gender-based violence were reported when some women insisted on accountability regarding the money from the marketed products from their spouses. Discussions with the women revealed that because of this challenge some women are not encouraged to put a lot of effort into production of surpluses, some women would rather be involved in production that is adequate for household food production and consumption.

### **3.2.6 Market-orientation and 'Commercialisation'**

The original log-frame identified the requirement for the "facilitation of farmer access to markets and e-voucher payment in order to strengthen commercialisation as a pull factor for production and increased farm incomes to ensure sustainability of CA systems", with three important sub-components identified as:

- i. Market information system enhancement through contracting AMAC and ZNFU commodity marketing systems services;
- ii. Improved contracts between producer groups and buyers in order to increase the bargaining power of beneficiaries and to facilitate commercialisation of expected increased production;
- iii. Expansion of existing e-voucher payment system for input procurement in terms of targeted beneficiaries and areas;

FISRI did not directly project-manage this component, contracting instead ZNFU to assume day-to-day responsibility for its development and management, especially since ZNFU was already engaged in similar activities for its members. While activities under this component were undertaken, there were mixed results.

The expansion of the e-voucher payment system was generally perceived to have been a success, insofar as it increased the numbers of lead-farmer participation and promoted greater linkages between agri-dealers and the lead-farmers in facilitating commercial transactions, as well as enhancing agri-dealer outreach and retail outlet expansion. However, the e-voucher scheme was not accessible to the follower-farmers (the ultimate beneficiaries of FISRI) and was not performance-based and linked to improving CA-farming practice improvements, which would have increased its overall effectiveness and impact.

While ZNFU had previously established an SMS market and trade information service (supported by the Swedish Co-Operative Centre) and extended it to lead-farmers within FISRI, there is evidence that this extension and outreach was not sufficiently managed and mentored to include the follower-farmers, many of whom were perceived to be unaware of the services available to them in this regard. The SMS MIS provided market information on the main commodities (crops - maize, soybeans, wheat sorghum, cassava, groundnuts, sunflower, mixed beans and livestock - cattle, sheep, goats, pigs). ZNFU also supplemented this system with radio broadcasts and certain media articles.

In terms of improved contracts between producer groups and buyers in order to increase bargaining power, there is less evidence of the effectiveness and impact of this sub-component, which does not appear to have been addressed in any meaningful manner, other than through the MIS approach. A mentoring and capacity-building intervention involving producer groups did not appear to have been undertaken, or if it had, there was little field-based evidence of its existence and impact. This aspect will require greater focus and attention in CASU.

### 3.2.7 Project Design, Oversight and M&E Issues

In terms of governance, the Project Steering Committee (PSC) was tasked with assuming overall responsibility for oversight and on-going monitoring of progress and standards within FISRI, under the chairmanship of the MAL Permanent Secretary. Membership of the PSC comprised representatives of MAL, FAO (Secretarial), EC, GART, ZARI, ZNFU-CFU, ACT, Norway and CARE (NGO). It would appear that the PSC met infrequently and insufficiently to ensure appropriate oversight and guidance of project activities and outputs and to maximise the impact and sustainability of FISRI outcomes for the stakeholders. There is little documentary evidence by way of PSC Minutes to demonstrate otherwise.

Similarly, a National Taskforce on CA (chaired by MAL and facilitated by FAO), was to have been convened periodically as an information-sharing platform, reviewing project results and lessons learned, with dissemination of information to stakeholders, as relevant. Unfortunately, this initiative was not actively pursued, has been dormant for some time and has remained ineffective as a result.

In terms of project management and technical backstopping, this function was shared between MAL and FAO. A Project Management Unit (PMU) was established within MAL comprising MAL staff and FAO established a technical backstopping unit within the FAO Zambia office. A perceived parallel structure appears to have been established with the establishment of the two units in separate locations, where greater effectiveness and efficiency could have been achieved had a combined approach been adopted to establish a single unit located in MAL. This aspect should be reviewed under CASU.

Monitoring as a 'quantitative' function was not effectively established and managed, in part due to project design (and the ad-hoc extensions of FISRI), also due to 'parallel' project management structures and staffing (between MAL and FAO) and due in some part, to the perception of M&E being an imposed external requirement on FISRI rather than a means of learning-by-doing-and-reviewing. Monitoring was not conducted as a process, more episodic and lacking follow-through in terms of validation, spot-checking and learning-by-doing and reviewing – possibly viewing M&E as a compliance (policing) role rather than a means to measure performance, learn and evolve. As a result, monitoring was undertaken in an ad-hoc and disjointed manner, affecting the setting of performance indicators, the collection and analysis of evidence-based data and the quality and frequency of reporting from the districts upwards to the PSC.

Reporting, as a result, was often vague, late and/or ad-hoc, with key studies/reports often being delayed to the extent that they became less relevant (as they were often out-of-season), was frequently not standardised (and often undated) and were not readily accessible/retrievable (when required by the evaluation team).

Evaluation as a periodic 'qualitative' function was not undertaken at end of FISRI I (or FISRI II), where lessons learned and shortcomings would have been identified and addressed in subsequent extensions of FISRI. Had a formal evaluation process been undertaken, design and implementation shortcomings could have been addressed and improved. A further challenge was that log-frame was not updated and FISRI was not structured as a 'going concern' project, but remained on emergency mode on ad-hoc funding basis.

Project M&E needs to be comprehensively addressed and strengthened in CASU, with greater emphasis on integrated (not parallel) systems being developed in MAL, with active on-going support from FAO technical backstopping, including active deployment of FAO project staff in MAL to enhance more effective integration and synergy (in an effort to avoid parallel systems and structures being established).

Overall, based on all of the factors outlined above, this criterion is assessed as:

A rating of: **2** or **Satisfactory** (i.e. on balance according to plan, positive aspects outweighing negative aspects)

## 3.3 Efficiency (Sound Management & Value-for-Money)

The efficiency criterion concerns how well the various activities transformed the available resources into the intended results (sometimes referred to as outputs), in terms of quality, quantity and timeliness. A key question it asks is: "Were things done right?" and thereby, also addresses value-for-money, that is whether similar results could have been achieved more by other means at lower cost in the same time.

Assessment of FISRI under the Efficiency criterion is analysed under the following headings:

### 3.3.1 Conservation Agriculture 'Best-Practice' Approach

In terms of implementation of CA, not all principles were implemented on demonstration plots and these also lacked in terms of quantity. The majority of the lead-farmers were observed to have established CA demonstrations, but their quality and effectiveness varied. Although there was no evidence of standard training guidelines, general observations indicated limited knowledge of the CA concept as a whole. CA was generally defined as a list of activities that the farmers go through in implementing CA and general understanding of the philosophy and justification of CA did not appear to be understood and indeed, was not addressed in the training and capacity-development process.

The financial support received by the CEOs to monitor and support farmers was not attached to specific activities which made it difficult to ensure that project activities were timely carried-out. Incentives for the CEOs should have been separated from the operational resources. The challenges included the failure to link the incentives (e-vouchers) received by the lead-farmers to their roles in terms of supporting the follower-farmers. This affected both the status of the demonstrations and the learning process for the follower-farmers, who are the ultimate target beneficiaries for the project.

There was a distinct lack of sufficient evidence-based data/information in a standardised format and on a consistent basis from the district/camp-level that would have been capable of demonstrating measurable progress, impact and trends, which presents a challenge in communicating the project successes to other communities not involved in the project.

### 3.3.2 Lead-Farmers and Participating ('Follower') Farmers

FISRI resources appeared adequate but the bureaucracy at all levels often left the CEOs shouldering the costs of project activities. The visitation by CEOs does not cover all the farmers in the programme. Equally the contact between the lead-farmer and follower-farmers was not very clearly stated and often the number of actively participating follower-farmers was much less than the 15 planned (often an average of 8 participating farmers).

CA is a management system that emphasises timeliness of activities. On the whole, the activities were applied on time except for bureaucratic delays such as the late submission of district-level progress reports leading to a denial of funds for a district, which in turn led to poor monitoring and extension support.

The value of the lead-farmer is diminished by the discord between this level and the follower-farmer. The true value-for-money may not be met in this circumstance, hence the call to re-examine the manner in which the lead-farmer will play his role. The organisation of the follower-farmers into a Work Group helps each member in turn to prepare the basins. Some lead-farmers in Chongwe went out of their way to bring into the group a female farmer who they felt was very vulnerable.

The lack of sufficient evidence-based data/information in a standardised format and on a consistent basis from the district/camp-level in order to demonstrate measurable progress, impact and trends was a significant problem.

### 3.3.3 Capacity-building and Training

While training was planned and carried-out for the targeted participants, the limited intervention, in terms of scope and quality, compromised the efficiency of the undertaking in the project. CA was not practiced at the level desired to bring-out the expected effects.

As noted during the evaluation period, some training events were out of synch with the season activities and therefore, not likely to be relevant and effective in terms of practical application and learning-by-doing-and-reviewing. An adoption of a comprehensive training programme by FISRI, starting with clear training needs to which training was to respond and a training work plan supported by a robust follow-up strategy (M&E), would have allowed the capturing of changes in behaviour and improvement in skills of the targeted participants due to training.

Limited successes were noted in the area of training apart from the good knowledge on CA exhibited by the district and field staff. Good practice of CA at the farmer level was less than satisfactory with only some components of CA being adopted.

There was absence of sufficient evidence-based data/information in a standardised format and on a consistent basis from the district/camp-level that demonstrates measurable progress, impact and trends resulting from capacity-building interventions.

### 3.3.4 E-Voucher Scheme and Mechanisation

In 2010, the e-voucher season was early whereas in comparison, the 2011 season started almost 30 days later than the previous season<sup>17</sup>. In 2011, the season started in the first week of October whereas at this time last year, 46% of the transactions of 2010 were already presented. However, in 2011, the presentation of transactions was much faster the first 40 days such that by 30 October, the number of transactions in 2011 was practically the same as was the rate at this time in 2010, 80% of transactions presented. The 80% mark was reached in 40 days last season but in half the time in 2011.

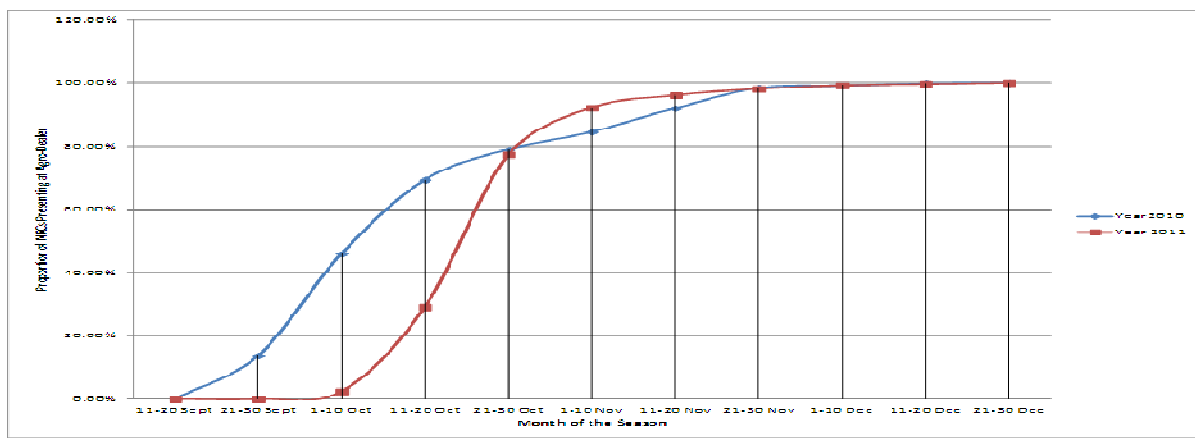


Figure 1: Timing and Rate of Voucher Redeeming at Agro-dealers for 2010 and 2011 seasons.

The period of validity of the e-voucher was a fixed for one month only but in all cases the e-vouchers were delivered late thus the redeeming period was reduced (Figure 1 above). This resulted in 'panic buying' by farmers, a situation that predisposes the farmers to exploitation by Agro-dealers as there is no time for 'shopping' to compare prices and indeed negotiate. Because e-vouchers were redeemable only in certain shops, a situation presents itself for formation of a price cartel by agro-dealers to exploit farmers by increasing prices of items on the e-vouchers.

The e-vouchers have also stimulated the agro-dealers to increase their network and grow their business thereby bringing inputs closer to the farmers. The e-voucher was cost-effective compared to FISP, the project distributing the inputs directly. The many farmers who were able to get the inputs through the private sector channels and the ability of the private sector to move such large volumes of inputs and implements to project districts is a particular success of the project

A challenge was the delayed start of the e-voucher season and the delivery of Fiterelli planters, as well as a lack of sufficient evidence-based data/information in a standardised format and on a consistent basis from the district/camp-level that demonstrates measurable progress, impact and trends.

### 3.3.5 Gender Mainstreaming and Food Security

There is no obvious strategy to promote gender equity in FISRI. There is little evidence that staff have the necessary competence of mainstreaming gender dimensions in CA programming, as is evidenced by the limited planned integration of gender dimensions in the entire FISRI project cycle and from the discussions with the staff. Mainstreaming of gender is not included as a crucial element in the performance appraisal of staff which means there is no accountability for gender mainstreaming for staff. Consequently, some of the surveys and progress reports that have been produced are silent on gender dimensions and the results cannot be used to influence gender sensitive programming. There are weak gender mainstreaming systems and mechanisms/applications in place. FISRI does not seem to have rigorous gender quality control mechanisms and this has resulted in limited gender-related results in the project components. CA capacity-building has not included social and gender issues.

<sup>17</sup> The impact of an Election year



FISRI has not performed adequately on the promotion of gender equality amongst its partners who are subcontracted to perform certain tasks. For instance, the partner which was sub-contracted to implement the mechanisation component, the gender dimension as a social product in the agricultural sector has not been integrated in this component resulting in few women benefitting from mechanisation and no women owning project-facilitated tractor rippers. There is no deliberate engagement of the partners it subcontracts for gender mainstreaming and subsequently gender mainstreaming has not been a commonly shared and prioritized on the agenda during the project implementation processes.

The limited attention to gender reveals that there is no effective and efficient gender focal person with clear terms of reference to play the crucial responsibility of acting as a gender ‘think tank’, gender systematic quality control and initial gender screening point. The M&E system has not collected sex disaggregated data and gender qualitative information for use in gender sensitive programming.

Discussions with beneficiaries indicated that farmers have attained food self-sufficiency, through the increased productivity from CA, they now have food (staple food) for home consumption and some have managed to get surplus from their produce to market. However, M&E systems have not provided trends of food sufficiency within the lead-farmers and participating farmers over the past three phases.

### **3.3.6 Market-orientation and ‘Commercialisation’**

In the broadest sense, the E-Voucher Scheme, administered by MTZ, was a significant innovation and represented an effective use of project resources. The e-voucher scheme facilitated the transfer of project resources efficiently and cost-effectively to the lead-farmers in a transparent and accountable manner. However, since the e-voucher scheme was not envisaged to evolve and develop in line with FISRI requirements, it can be questioned as to whether the ‘static’ aspects of the e-voucher scheme (i.e. not indexed over the 3 years to match inflation, restricted to use by lead-farmers, not performance-based and linked to results etc.) offered overall value-for-money, particularly as the results of the lead-farmer approach had varying degrees of success at relatively high cost of implementation, particularly as the performance-based element was effectively missing. There is also evidence that agri-dealers may have been inflating prices for inputs to lead-farmers who presented e-vouchers as payment for input purchases, somewhat undermining the value of the initiative, though this aspect is seen as a minor challenge in the overall context.

Similarly, the Mechanisation Pilot was perceived as another successful initiative in combining private sector initiative with project-related funding to develop ox-drawn and tractor-drawn ripping, seeding and spraying services to certain farmers. Demand for the service highlighted the pent-up demand for mechanisation and labour-saving initiatives. However, the delivery of the equipment was often late in the season and access to the service was on a ‘first come, first served’ basis, where farmers willing to pay cash or more ‘influential’ farmers were likely to have greater access to the service than other ‘less influential’ farmers. In overall terms, the pilot mechanisation service is broadly seen to have been an efficient use of project resources and can be deemed to be value-for-money under the circumstances.

The ZNFU-led SMS-based market information system was adopted as an approach to give participating farmers access to better quality and more reliable market information from an established source. However, there is evidence that while lead-farmers may have been utilising the SMS-based MIS, many follower-farmers were either unaware of the service or did not know how to utilise it effectively for best results. There was significant evidence of follower-farmers not being able to quickly sell their harvest, or they were subject to unscrupulous buyers who offered very low prices in the absence of market information, and these aspects should have been better addressed by the combination of the CEOs, the lead-farmers and ZNFU’s MIS coming together more effectively. As a result, the MIS and market access element could have been more effective and as a consequence, its value-for-money aspect can be questioned in this case.

The engagement of GART and ZARI to partner with FISRI and to undertake relevant research & development under CA has not been as effective as it could have been. Due to budgetary limitations, it was not possible for GART or ZARI to undertake any meaningful research under FISRI. This was further hampered because of a lack of sufficient evidence-based data/information in a standardised format and on a consistent basis from the district/camp-level that could demonstrate measurable progress, impact and trends that could have been incorporated into GART-ZARI research programmes.

### 3.3.7 Project Design, Oversight and M&E Issues

In terms of governance (the PSC, National Taskforce on CA and the PMU), the main issues of effectiveness have been outlined in Section 3.2.7 above. Arising from the apparent deficiencies in undertaking the oversight and accountability requirements of both the PSC and the PMU, in terms of frequency of meetings and engagement with the wider stakeholder group, the issues of concern under this heading focus on project management and technical backstopping, the quality and reliability of the M&E systems and its adverse knock-on effect on the quality and consistency of project reporting.

In terms of Project Management and Technical Backstopping, the following aspects are of concern:

- While FISRI I had a medium-term duration (2 years), the rapid succession and partial overlap of FISRI II and III indicates some improvised, ad-hoc approach to project planning; likewise, the undefined status of FISRI III's termination date shows that the planning horizon for the project was uncertain, which may explain some of the implementation difficulties and apparent project management weaknesses.
- In addition, FISRI III referred to the project as being "managed in two fronts": (i) the National Co-ordination Team and (ii) the Technical Team. The National Co-ordination Team was to report to the Project Steering Committee in order "to provide Government resources to the project and to give policy direction" (Progress Report, October 2010). Two review meetings were reported to have been held in 2010; again, no records were available to the evaluation team. The Project Technical Team was to provide technical guidance to the project in its implementation. No records of technical team meetings were available to the evaluation team.
- Technical support arrangements in FISRI appear to have developed in an ad-hoc fashion: the LTO (as appearing in FPMIS) were at HQ, but until 2012, technical backstopping visits seem to have come exclusively from the Technical Officer based in FAO's sub-regional office in Harare (SFS), while FAO HQ-based LTOs provided some technical comments.
- Technical backstopping on the ground was provided mainly through certain international consultants, augmented by the FAO-based agronomist and M&E teams, though there is some evidence of parallel processes in existence between FAO and MAL in this regard.

In terms of the M&E System, the following aspects are of concern:

- There was a distinct lack of sufficient evidence-based data/information in a standardised format and on a consistent basis from the district/camp-level that would have been capable of demonstrating measurable progress, impact and trends, which presents a challenge in communicating the project successes to other communities not involved in the project. However, general increases in yields were reported by lead-farmers in the project districts visited and these findings were confirmed by the results of the Post-Harvest Surveys implemented by the project (during 2010 and 2011 harvest years).
- In terms of project staffing, the roles and responsibilities within the DRMU could have been better defined: in particular the M&E Officer not only deals with the project's M&E system, but also acts as Communications and Reporting Officer.
- In terms of gender mainstreaming, sex disaggregated data and gender qualitative information for use in gender sensitive programming was not sufficiently collected and analysed.

In terms of the Reporting System, the following aspects are of concern:

- Overall, insufficient project information was made available to the Evaluation Team during the field-stage evaluation process, in particular project progress reports and financial reporting (detailing funds flows and expenditure).
- FISRI's progress is not well reported, as there was insufficient and readily available evidence to demonstrate otherwise. Despite repeated requests for access to project progress reports, PSC minutes and other project reports/studies proved challenging (as no apparent basic organised system for electronic document storage and retrieval appears to be in place) – very few progress reports were available from FAO's FPMIS, and also other reports suffered long delays in hand-over (if at all). The project claimed repeatedly in certain of its progress reports that an "efficient and effective monitoring, reporting and lesson learning system" was in place. However, this contrasted with the findings of two EU ROM missions in 2010 and 2011, which found the M&E system weak (although the 2011 ROM mission acknowledged progress being made), and also with an FAO audit of the overall country programme which came to the same conclusion.

- These judgments are endorsed by the evaluation team: the documentation on project progress made available to the evaluation team was fragmented (progress reports were present only for less than half of the participating districts, and sometimes not in the stipulated format), and often out of date (or undated). The latter aspect is highlighted by the delay in producing the 2010-11 Post Harvest Assessment: the report was not ready in February/March 2012 for the Beneficiary Assessment, and was only made available to the evaluation team on the day of the wrap-up debriefing – too late to be of use to the evaluation, but – more importantly – also much too late to be of any value in planning the 2011-12 campaign.
- There have also been reports about delayed information flows regarding budget matters between the DRRMU (later DRMU) and FAO HQ, and in the past (until early 2012) there was also only limited financial monitoring by the FAO Representative, as the budget was held by the Emergency Division (TCE) at FAO HQ. In addition, many activities organised by MAL depend on funding made available from DRMU: this raises questions not only about the future organisation of these activities, but also about the transparency of the process, as funding of these activities appears to be authorised against blanket requests.

In terms of the Value-for-Money aspect, the following aspects are of concern:

- FISRI resources appeared adequate but the bureaucracy at all levels often left the CEOs shouldering the costs of project activities. The visitation by CEOs does not cover all the farmers in the programme. Equally the contact between the lead-farmer and follower-farmers was not very clearly stated and often the number of actively participating follower-farmers was much less than the 15 planned (often an average of 8 participating farmers).
- Delays in procurement resulted in inefficiencies in project expenditure utilisation, as evidenced by the mechanisation pilot, where equipment purchase was delayed and introduced late in the season, with the result that much of the equipment was standing idle for some time. Similarly, poor centralised procurement resulted in the purchase of Chinese-made bicycles for the lead-farmers (when African-made bicycles were available) that were unsuitable for the terrain and where the wheels and frame were not strong enough and quickly disintegrated. Due to a lack of budget for repairs, most of these bicycles were scrapped as they were unusable. The supply of motorbikes to the CEOs also demonstrated some shortcomings, where supply of spare parts was slow (and overly bureaucratic) or insufficient funds were available to cover the practical requirements of maintaining these essential resources, with the result that 5 motorbikes are inoperable in one district, affecting the ability of CEOs to visit lead-farmers and ensure proper mentoring and monitoring of performance on the ground.
- Evidence of delayed or poorly planned field training (e.g. spraying of herbicides) was out-of-season and it is questionable whether the practical value and learning effect was meaningful in this instance.

Overall, based on all of the factors outlined above, this criterion is assessed as:

A rating of: **3** or Less Than Satisfactory (i.e. not sufficiently according to plan, taking account of the evolving context; a few positive aspects, but outweighed by negative aspects)

### 3.4 Impact (Achievement of Wider Effects)

The term impact (sometimes referred to as outcome), denotes the relationship between the project/programme purpose and overall objectives, that is the extent to which the benefits received by the target beneficiaries had a wider overall effect on larger numbers of people in the sector or region or in the country as a whole. The analysis, which should be both quantitative and qualitative wherever possible, will need to take account of the fact that, at this level, the project/programme will normally be only one of a number of influences contributing to the wider outcome.

Assessment of FISRI under the Impact criterion is analysed under the following headings:

#### 3.4.1 Conservation Agriculture 'Best-Practice' Approach

FISRI demonstrated benefits in terms of increased production and food security have been highlighted by beneficiaries in the project areas. Significant reductions in labour requirements, especially for weeding were also observed. Quantifying the benefits in terms of % increase or the number of food secure months and estimates in labour savings was a challenge as no data was collected specifically to answer these questions. Evidence from focus group discussions and observations indicated significant yield gains for farmers implementing CA.



Some challenges were experienced in marketing the increased volumes of produce, especially the non-traditional crops (legumes and some cash crops) as farmers did not appear to have been linked to any markets and were not aware of market prices and trends. The impact in terms of increased production appears to be quite significant although the absence of reliable markets for legumes means that the farmers are now reluctant to grow these crops as a result.

CA best-practice adoption is a process that is well underway in Zambia, fully supported by the Government of Zambia and augmented by the international donors, including the EU through FISRI. Adequate documentation of these practices will enhance the adoption processes and may even see new best-practices evolving from CA implementation. FISRI has played an important role in driving the CA agenda, alongside CFU and others, and the implementation of CASU will further increase the impact in this regard. The close integration of FISRI with MAL has enabled some lesson learning and eventual adoption of some approaches from FISRI by MAL, e.g. the planned piloting of the e-vouchers for FISP, the government-supported input programme.

### **3.4.2 Lead-Farmers and Participating ('Follower') Farmers**

The use of the lead-farmer/follower-farmer model has enabled the extension services to cover a much wider number of farmers with fewer resources than would have been possible outside the model. This utility, however, is diminished by the discord between the two groups arising from the access to inputs accorded to lead-farmers but not to follower-farmers. With changes in the use of the model, especially related to graduation and rotation and linked to performance-based approaches and incentives, even bigger benefits are bound to flow from lead-farmers.

It is too early at this stage to measure the impact of FISRI as the impact is difficult to accurately measure where adequate controls were not in place. The project design should include non-participants in the on-going monitoring to assist in attribution and measurement of the extent of the changes.

### **3.4.3 Capacity-building and Training**

Despite the limited evidence of training events for farmers under the FISRI project, there was ample evidence of farmers getting increased crop yields. This was more so at the lead-farmer level, implying that CA potential has been exhibited and that when adopted, can contribute to improved food security. Maize yields were reported to have increased from an average of 1.4 tonnes/ha to over 3 tonnes/ha. Training of district and field staff was a means of ensuring that farmers are imparted with CA knowledge, thus the increased crop productivity can be directly related to the training on CA technologies resulting in farmers 'changing' their behaviour of crop cultivation from a conventional approach to the CA approach.

Training of the participating-farmers by the lead-farmers did not show sufficient impact due to the 'complication' and confusion introduced by the input provision to the lead-farmers via the e-voucher scheme. Only few participating-farmers were found to be practicing CA and these reported improved maize yields. In general, farmers reported enhanced food security and income generation arising from adoption of CA under FISRI.

### **3.4.4 E-Voucher Scheme and Mechanisation**

The e-voucher scheme and mechanisation pilot have changed the perception about small-scale agriculture. Firstly, the supply of inputs for small-scale farmers has been shown to be potentially free from special interest influences. Of much wider impact is the backbone of the agro-dealers network built by the introduction of the e-voucher scheme. This infrastructure will penetrate ever further into the rural areas and serve as a channel for more services such as supplementary foods for infant feeding to treat malnutrition and many other health services shall find conveyance through the system built by the e-voucher scheme.

Mechanisation is going to increase the area under crops far beyond what was possible with hand hoe. The inclusion of subsidiary machinery such as the planter, herbicide applicator, maize sheller etc., further reduces drudgery and encourages the farmers to increase total production from both productivity and expansion of area under cultivation.

### **3.4.5 Gender Mainstreaming and Food Security**

Women do not usually own draft power as cattle are a male domain traditionally, however conservation farming has managed to encompass even the women and men who do not have draft power and this enabled women and the youth who are less likely to have draft power to participate in CA.

However, high labour requirement for CA had a negative impact on women, especially as it resulted in a heavy workload burden for them in the first and second years of CA adoption. Women compared to men are already involved in a variety of reproductive roles such as home and child care. Fewer women have benefited from mechanisation and in addition, gender dimensions reduce women's adoption of herbicides but this could have greatly lightened the burden for women during basin holing and weeding. The weekly farmer field training meetings for five-seven hours after walking for long distances (ranging up to 20km) because of lack of bicycles is not appropriate for women who have to walk back late to do household chores. The meeting calendar is not necessarily gender friendly.

CA training empowered women, increased their knowledge asset levels and contributed towards their livelihoods development. Some women indicated that they had managed to pay fees for their children, gained confidence and developed social skills as a result of mixing and networking with others. Although there is limited data regarding the extent to which first beneficiary level (lead-farmers) have attained food self-sufficiency, certain lead-farmers indicated that through increased productivity from CA, they now have staple food for home consumption and some have managed to get surplus from their produce to market.

### 3.4.6 Market-orientation and 'Commercialisation'

The development of market-oriented initiatives under FISRI, insofar as they related to the e-voucher scheme and the mechanisation pilot, were the first steps in the roll-out of a larger scheme of this nature under FISP and possibly under CASU. As a result, they had significant impact in introducing to MAL and to the wider stakeholders the potential for initiatives of this nature to be rolled-out further in the future to facilitate development of input linkages and use of innovative e-technologies in partnership with the private sector.

The innovations introduced under FISRI in terms of the e-voucher scheme and the pilot mechanisation initiative both served to promote greater market access to inputs, such as seeds, fertilisers, herbicides, equipment and ox-drawn and tractor-drawn ripping/spraying services. In turn, this served to extend the outreach and network of agri-dealers and agri-contractors, improving access to certain commercial services to relatively remote rural areas and promoting basic commercial transactions and an initial introduction to market forces to farmers.

However, the development of post-harvest market linkages appeared to be less successful in its reach and impact on the follower-farmers, many of whom were not actively engaged in the ZNFU MIS and/or the facilitation of linkages to buyers and other market intermediaries.

Overall, there is need for greater supply and value-chain linkages to be developed and promoted and ZNFU has a major role to play as intermediary (in terms of matchmaking and capacity-building, awareness-raising and mentoring) of its smallholder constituency base. Ultimately, a move away from pure commoditisation to increased value-added and branded produce has the potential of creating local economic development and enhanced employment creation possibilities at local community level.

### 3.4.7 Project Design, Oversight and M&E Issues

CA demonstrably increases production yields for smaller and mid-sized farmers, and this was demonstrated in FISRI, if not adequately recorded. A major opportunity to comprehensively and systematically record, analyse and develop new innovations and technologies through applied research (in partnership with GART and ZARI) was missed due to the inconsistent and ineffective M&E and reporting system maintained in FISRI.

Overall, based on all of the factors outlined above, this criterion is assessed as:

A rating of: **2** or **Satisfactory** (i.e. on balance according to plan, positive aspects outweighing negative aspects)

### 3.5 Sustainability (Likely Continuation of Achieved Results)

Often the most important criterion, sustainability relates to whether the positive outcomes of the project/programme at purpose level are likely to continue after external funding ends, and also whether its longer-term impact on the wider development process can also be sustained at the level of the sector, region or country.

Assessment of FISRI under the Sustainability criterion is analysed under the following headings:

#### 3.5.1 Conservation Agriculture ‘Best-Practice’ Approach

Some best agriculture practices evolving from implementing CA may continue beyond FISRI i.e. the precise application of fertilisers, lime and manure, use of herbicides to reduce labour burden for weeding and CA options that enable timely planting may continue. Many farmers have also realised the benefits of intensification through concentrating resources on smaller land units, while at the same time, increasing their production. Use of mechanised CA implements is also likely to continue as this reduces the burden of labour which is a major limiting factor in smallholder agriculture.

The linkages created through the implementation of the e-voucher scheme may likely continue beyond the project period. The project has created an interaction forum for stakeholders involved with different components of the project.

Challenges in implementing the principle of maintaining soil cover was observed across all districts visited.

Certain aspects of FISRI outputs may not necessarily be sustainable if project activities were to cease fully. Use of legumes and other non-traditional crops in rotations by CA farmers may not be sustainable unless market linkages are developed to address seed shortages and lack of access to markets for some of the crops. To ensure farmers also maintain soil cover in their CA fields, recognition of the needs for their livestock and the inclusion of appropriate interventions are key to the success of CA. If CA is not adequately integrated in MAL activities, in terms of incorporation into regular training programmes, the technical support which farmers will require may not be readily available. CA activities should cease being referred to as ‘project activities’.

#### 3.5.2 Lead-Farmers and Participating (‘Follower’) Farmers

The sustainability of the lead-farmer model has been undermined by the inputs received by the lead-farmer. The lead-farmers identified the follower-farmers and were instrumental in selecting them to join the project. Because of the input and equipment e-vouchers given to the lead-farmers, the participation of the follower-farmers has dropped-off. As the lead-farmers were selected at community level, those who were not selected have been reluctant to become follower-farmers as that appears to demote them in terms of perceived status. Consequently, the interaction between the lead-farmer and the follower-farmer is problematic and presents many challenges to the extension approach as implemented in the project. The lead-farmer reported specific times that they met with the follower-farmers:

- i. At harvest, the lead-farmers are called to explain the start of the land preparation
- ii. At the start of planting
- iii. Occasional home visits to encourage follower-farmers towards adoption of CA to improve productivity

The lead-farmer model in FISRI is stalling and needs injection of new dynamism to prevent it from falling into dead routine for a ‘clique’ (or ‘closed’ group).

E-Vouchers could stop because they are a perceived subsidy but the agro-dealers and mechanisation would continue to offer the services on cash basis.

With the continuation of CFU and the follow-up of CASU (to FISRI), certain aspects introduced under FISRI can be augmented and sustained further to give them a stronger foundation and base from which to develop further, such as:

- i. The agro-dealer network in rural areas
- ii. The mechanisation services to reduce drudgery

The e-voucher is thus recommended for out-scaling where the need to demonstrate the solution to a felt need. In FISRI, the e-voucher was tied to the teaching role of the lead-farmer and CEOs. In this role, the e-voucher enabled a demonstration of the CA technology components to all. Whether it has had the desired impact on the target group i.e. the follower or participating farmer is open to question until the project collects appropriate data on this group. This is strongly so because the follower-farmers are despondent for not being eligible to access the e-voucher. They are also the least reported beneficiaries.

### 3.5.3 Capacity-building and Training

Training interventions in the FISRI project have, unfortunately, not been well documented as analysis of training processes and feedback is not easy. On the other hand, some effects of these interventions could be seen at various levels, namely the service providers, agro-dealers and the district and field staff and, less so at the farmer level. Beyond the FISRI project, the effects of these interventions are threatened with dissipation unless a passionate cadre of trainers is created at the farmer level which would drive the CA technology. Current arrangement and thinking of using the district and field staff as key drivers for the future has been tried before on many other technologies in Zambia and challenges on sustainability have always surfaced arising from 'lack of funds' to operate. In the absence of documented experiences and 'custodians' of CA capacity-building activities, sustaining these activities in the farming communities is not easily conceivable.

The presence of other players in CA in the country with comprehensive capacity-building approaches, such as the CFU, provides an opportunity for sustainability in respect of CA training, but there has to be a concerted effort to bring onboard such contributions from all players for the benefit of the farmers in the country.

### 3.5.4 E-Voucher Scheme and Mechanisation

The positive outcomes, arising from FISRI, that are likely to continue are the expanded agro-dealer services and the mechanisation service providers. For both of these, FISRI has been a development phase that permitted them to find their own feet. Planting basins may be earlier but they are not faster or lighter on the practitioner. The ox-drawn ripper solves the scale and speed limitation of the chaka hoe and conventional ploughing. Going further up the ladder, the tractor-drawn ripper and planter improves upon the ox-drawn implements. This stage, however, is accessible largely by hire (see Figure 2 below), removing the control of time in the hands of the operator. As long as the barrier to entry is the cost of the tractors, operators will enter the business until profits become zero. To avoid over-concentration of the service in the hands of a few, the financing institutions should vary the repayment period from 3 years when the demand is high to 6 years when the demand is in equilibrium with supply. Keeping the number of operators high in this manner will open access to more farmers.

The likely longer-term impacts on the wider development process (in the sector, industry, country and/or region) are access to mechanisation to reduce drudgery and in the FISRI case, to implement conservation agriculture means that larger areas will be put under a sustainable production system leading to increased overall production. The major success of FISRI is the exposure of farmers to the possibilities of mechanisation and addressing the needs of middle income farmers.

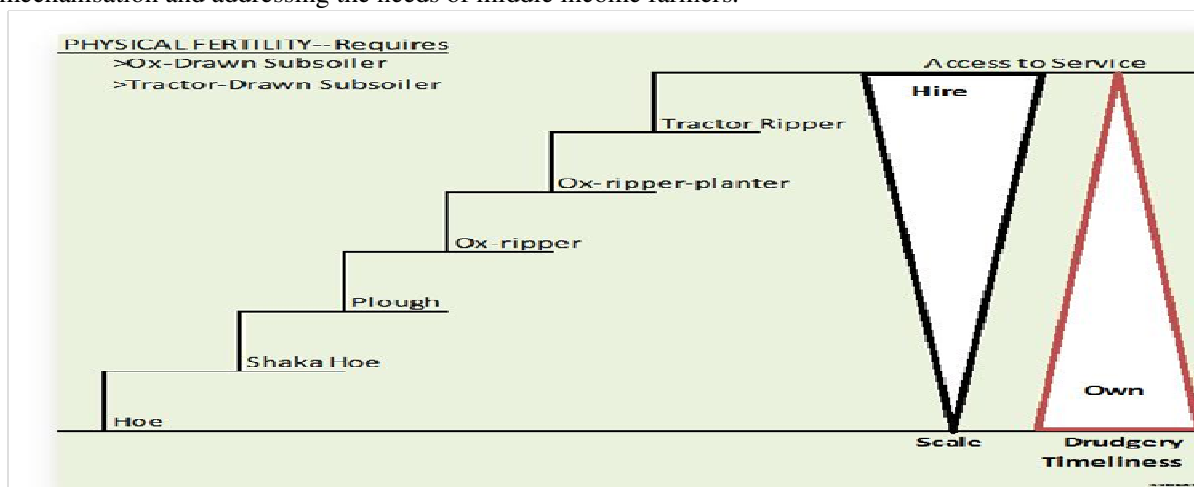


Figure 2. The trends in drudgery, timeliness and scale of operation for different land preparation methods

The major challenge encountered was access to tractor services facilitated by e-vouchers given to lead-farmers. The fact that the farmer bought the herbicides meant that the mixing was done at the farmer's farm. This exposes the herbicides to water of differing pH and other mineral composition that may affect the efficacy and efficiency of the herbicides. In the interim, the tractor service providers should be responsible for buying the herbicides and other inputs and let the farmer pay for full service at a price that includes the cost of inputs.

The same is true for the ox-drawn mechanisation providers. Here also the sprayer teams should bear the risks of poor mixing of chemical and should provide the farmer with advice on choice of chemical given the timing of spraying. By the end of a few years, the farmers would have gained insight from the operator and be more comfortable to own his own sprayer and chemicals.

At the risk of e-vouchers not being redeemed, due to some error/problem in the redeeming process, some agro-dealers gave inputs before the e-vouchers are redeemed. This has led to some serious problems of unredeemed e-vouchers with agro-dealers, a financial challenge that should be addressed quickly to ensure success of the e-voucher system in going forward.

The contractors have had problems with machinery operations due to limited knowledge of the machinery regarding operation, maintenance and storage. Tractors were found in the sun and un-oiled. Some operators are building sheds to house the tractor and equipment. The lack of designated maintenance provider means that the operators seek their own solutions such as tying pieces with ordinary wire in the absence of an approved clip. The limited training spreads to the use of inputs such as the herbicides, fertilisers and seed. The operation of attachments that apply these inputs is yet to gain proficiency in a lot of operators. The time to observe the tractors is short, it is only in October 2012 that the operators will have one year of data. The record-keeping is yet to be standardised by MAL. The performance of the business model can only be estimated from the excellent repayment rates achieved by the 10 operators who are surpassing expectations.

### 3.5.5 Gender Mainstreaming and Food Security

The current under-consideration of gender concerns in CA is a threat for future sustainability of CA operations, food security and contribution to overall household economy since women are the major food producers. In FISRI, there has been no pre-planned approach towards their involvement in order to increase their participation, access and control of economic proceeds. The longer-term impact of FISRI if gender concerns are incorporated include reduced labour burden for women and men in CA processes, expansion of area under crop, increased livelihood assets, equal access and control of assets and benefits by women and men.

### 3.5.6 Market-orientation and 'Commercialisation'

The development of market-oriented initiatives under FISRI, insofar as they related to the e-voucher scheme and the mechanisation pilot, were the first steps in the roll-out of a larger scheme of this nature under FISP and possibly under CASU. As a result, they had significant impact in introducing to MAL and to the wider stakeholders the potential for initiatives of this nature to be rolled-out further in the future to facilitate development of input linkages and use of innovative e-technologies in partnership with the private sector. It is anticipated that these initiatives will likely continue in the absence of FISRI, particularly as FISP, CFU and CASU will attempt to address and augment this aspect further.

However, the development of post-harvest market linkages appeared to be less successful in its reach and impact on the follower-farmers, many of whom were not actively engaged in the ZNFU MIS and/or the facilitation of linkages to buyers and other market intermediaries. Greater attention to development of market linkages and 'match-making' is required to sustain the limited initiatives undertaken under FISRI. Under current circumstances, this aspect of FISRI outputs is not likely to be sustainable without immediate attention from MAL and other stakeholders.

### 3.5.7 Project Design, Oversight and M&E Issues

The M&E system within MAL has not been effectively established to be sustainable. There is evidence of parallel systems in MAL and FAO during FISRI and these have not been integrated and sufficiently resourced to ensure continuity and effectiveness beyond FISRI. While CASU is likely to take-over from FISRI, the current M&E structures and systems in place are not deemed to be 'fit for purpose' and therefore, not sustainable.

It is strongly recommended that under CASU, a new attempt at establishing a functioning and effective M&E system be undertaken, taking account of the lessons learned under FISRI, with particular emphasis on establishing an integrated (not parallel) system of M&E and Reporting, combining the efforts of MAL and FAO within one PMU to achieve greater streamlining and effectiveness.

Overall, based on all of the factors outlined above, this criterion is assessed as:

A rating of: **2** or **Satisfactory** (i.e. on balance according to plan, positive aspects outweighing negative aspects)



## 4.0 SWOT Analysis and Main Conclusions

### 4.1 SWOT Analysis

STRENGTHS (of FISRI)	WEAKNESSES (of FISRI)
<ul style="list-style-type: none"> <li>▪ CA focus has resulted in demonstrable productivity improvements and interventions that strongly support food security, environmental sustainability and poverty alleviation through a combination of the lead-farmers and CEOs;</li> <li>▪ Strong linkages with MAL, integrating with the district network outreach through the CEOs;</li> <li>▪ Public-Private Partnerships (PPPs) are promoted, especially through the use of agri-dealers and agri-contractors;</li> <li>▪ Project funds are targeted and released directly to the district level, in terms of targeting of the CEOs and lead-farmers;</li> </ul>	<ul style="list-style-type: none"> <li>▪ FISRI has stopped-short at the lead-farmer level, with limited engagement with participating farmers, hampering meaningful understanding of the issues on-the-ground;</li> <li>▪ M&amp;E is a concern in terms of adoption by MAL and support by FAO in terms of follow-up (for tracking, aggregation/disaggregation, progress reporting etc.). M&amp;E is not perceived as an evolving and learning process for MAL. Data collection and analysis, in terms of yields, costs of production, cost-benefit etc. is limited and ineffective;</li> <li>▪ Capacity-building does not appear to be 'programmed' or a 'process' and is not as responsive to 'felt' needs. Lead-farmers were to be trained through the farmer field schools, but they were often under-resourced and limited in terms of impact, whereas capacity-building is unlikely to be sustainable as a train-the-trainer approach is not sufficiently addressed and developed;</li> <li>▪ Promotion of CA is not effective in terms of clarity of concept, long-term benefits and the main ethos behind CA (i.e. a way of 'thinking before doing') – it is not clear whether CA adoption is based on incentives (e-voucher) or is a 'passion' among participating-farmers;</li> <li>▪ FISRI project design issues undermine its effectiveness in terms of: targeting end-users, gender, food security, progressive/performance-based approaches, M&amp;E etc., with no meaningful review/reflection points between phases I-III;</li> <li>▪ E-Vouchers were not evolving in terms of indexation, linkage to specific/required farmer activity, stage of farmer development and/or progression/performance management;</li> <li>▪ FISRI may be contributing inadvertently to the creation of a 'dependency syndrome' through its current e-voucher scheme and a focus on provision of inputs;</li> <li>▪ MAL DACO/CEOs perceive FISRI/CA as an added 'chore' rather than 'core' to their existing duties – whereas FISRI is not linked to FISP;</li> <li>▪ CA may be perceived as the 'poor man's agriculture' by more progressive farmers (without introduction of new technologies and mechanisation);</li> <li>▪ CA principles are not being correctly applied and adhered to (in terms of soil disturbance, mulching and crop rotation/interactions), issues of difference in effectiveness between available CA options (basins and ripping) are not clear and livestock is not integrated with crop production in application of CA;</li> <li>▪ Gender issues have not been adequately integrated into all FISRI processes (as a result of design) and social factors have not been sufficiently addressed (in terms of HIV-AIDS, traditional/social mores) in adoption of CA practices;</li> <li>▪ CA has not been adequately 'institutionalised' into MAL, research/training institutes and policy, where exposure to the principles of CA should happen earlier and more comprehensively;</li> </ul>



OPPORTUNITIES (for CASU)	THREATS (to CASU)
<ul style="list-style-type: none"> <li>▪ The potential offered by mechanisation and herbicide use has transformed CA into a more attractive prospect and approach;</li> <li>▪ CA promotes more sustainable agriculture practices to meet the Zambia-specific situation, in terms of climate change (drought), environmental protection (soil erosion) and food security (crop yields);</li> <li>▪ E-Vouchers, applied appropriately, can enhance participation of a wider base of farmers into CA and graduate experienced practitioners to higher levels for scale-up or as mentors, particularly when performance-based;</li> </ul>	<ul style="list-style-type: none"> <li>▪ Supports to CA scale-up need to be put in place in terms of ensuring an increased focus on market aspects, especially input supply, market access/marketing, supply/value-chain development and access to finance/working capital;</li> <li>▪ CA will not succeed in its scale-up without full adhesion to CA principles, as ad-hoc application will serve to undermine its effectiveness and may eventually result in disadoption;</li> <li>▪ CA up-scaling needs to better incorporate basic science and new technologies and research, whereas mechanisation will contribute to lessening of the stigma of CA as being perceived as the 'poor man's agriculture'. However, care needs to be taken in over-mechanisation and/or rapid scale-up (towards 'commercialisation'), where moves to conventional agriculture may result (as in ploughing, over-reliance on herbicides etc.);</li> </ul>

## 4.2 Overall Conclusion

1. FISRI (I-III) can be seen as a 'qualified success' in terms of its efforts to integrate with MAL in addressing the promotion of CA as a means of augmenting food security and a mitigation of the effects of increasing food and input prices by means of: (i) targeting of capacity-building/training to MAL CEOs and to lead-farmers in enhancing extension approaches; (ii) increasing access to inputs and equipment for lead-farmers; (iii) facilitating payment for inputs and services through an e-voucher system; and (iv) introduction of a pilot mechanisation scheme, through development of private sector agri-contractors. Where applied in the selected districts, there is definite evidence of benefit accruing to lead-farmers (and in turn to some participating farmers) of increased yields, improved CA farming practices and some improved linkages with agri-dealers and agri-contractors, though its documentation and demonstration effect is somewhat restricted.

FISRI is a very strategic and high-profile project that is a major support to government and MAL policy on promoting CA as a contributor to climate-smart, food security and sustainable agricultural practice. Its major strengths (as identified under the SWOT Analysis) include strong integration with MAL and government structures, promotion of private sector participation and introduction of innovative approaches to accessing inputs and agri-services through the e-voucher scheme and initial mechanisation up-scaling approaches.

As an external evaluation exercise, the focus of the evaluation is not necessarily concentrated on highlighting the successes and achievements of FISRI, of which there are some, but more in identifying the areas for improvement and the lessons learned that can be taken forward in the remaining period of FISRI III and in the context of future programming, in particular that of CASU.

## 4.3 Main Conclusions

### Conservation Agriculture 'Best-practice' Approaches

2. CA best-practice approaches can be reinforced more effectively through better informational, educational and communication approaches, notably:
  - Farmer testimonies and observations from the field have indicated several benefits from implementing CA (e.g. higher crop yields, timely planting, efficient use of small quantities of fertiliser/lime, reduction in labour demand due to herbicide use etc.) but there is still need for the systematic collection of evidence of CA performance over the long-term;
  - It is important to operate within standard agronomic and recommended principles, for example use of certain CA implements is compromising plant population in crops like groundnuts. There is therefore, a need to adhere to recommendations on plant population in order to enhance acceptance of CA by all stakeholders. This is a result of the absence of standard guidelines and regular interaction platforms for agencies implementing CA;
  - FISRI has not developed information, educational and communication on its best-practices to market CA and does not appear to have a FISRI communication strategy;

3. FISRI promoted strong linkages with MAL but this needs to be enhanced further through improved and integrated governance, reporting and M&E. The FISRI has provided a platform for interaction between the DRRMU and the MAL Project Management Unit. However, the linkages have not been formalised, meaning that the meetings between the two are irregular. Through joint programming of activities and regular periodic meetings, the NPCU and the DRRMU could enhance these linkages and contribute to improved FISRI governance, reporting and M&E effectiveness;
4. FISRI and FISP should be more clearly delineated to ensure they complement each other more effectively in the promotion of CA best-practice. The components of farmer support by FISRI included inputs, CA implements and CA supporting services for the demonstration and thereby uptake of CA by participating farmers, who did not receive any direct support. Concurrently in Zambia under MAL, there is the FISP which focuses on inputs only. The inclusion of the fertiliser and maize seed as inputs on the e-voucher under FISRI compromises the CA principles application as the project mimics the FISP. There is need to separate these two programmes in terms of content so that each pursues its ultimate goal. Ideally FISP inputs should be used in FISRI to promote greater adoption of CA principles and best-practice approaches (though an element of performance-based management should also be considered in this case);
5. CA best-practice has not been effectively ‘institutionalised’ across the sector in terms of its integration into policy, research and educational institutions, notably:
  - Institutionalisation has at least two meanings. The first refers to “introduction”, thus we may examine the introduction of Conservation Agriculture through the Crops department based at MAL headquarters in Mulungushi House. In this first meaning of institutionalisation, the FISRI is ‘established’ in an existing organisation to function as part of that organisation. This meaning will be examined closely to determine the degree to which the internalisation of the CA into MAL has been;
  - The second meaning is that of “tradition” or “practice” through which institutions control individual behaviour by a) restraining certain actions, b) liberating certain actions, and c) expanding the scope of influence of certain actions. Further, such institutions must be stable enough to give the individuals some security of expectations<sup>18</sup>. This meaning is important as it was the initial desire of the funding to FISRI and CA in general to ensure that the capacity to promote CA is built so that in future the MAL can continue to support CA. Indications that the Ministry may order tractors without ploughs but rippers are valuable indicators of institutionalisation. The practice is changing;
  - The degree to which the desire to see CA practiced has not permeated the whole sector. The students coming out of tertiary education should all be fully appraised on CA and its application;
6. There needs to be greater understanding at all levels of the philosophy and principles of CA before it is adopted as a best-practice approach, as there is evidence that it is becoming more activity-based with less understanding of why it should be adopted in the first place. Exclusively focusing on activity-based CA training will limit the understanding of CA by farmers who will not have a clear appreciation of the CA concept in terms of its long-term benefits. This presents a danger of farmers reverting to conventional farming practices after project support is withdrawn. There is therefore, need to continually re-enforce the CA principles and benefits by using simple models that can be understood by farmers (i.e. models showing soil quality, infiltration, erosion, etc.). Clear understanding of the CA principles will allow the farmer to innovate and adapt CA, while still staying within the three core principles of effective CA practice;

### **Lead-Farmers and Participating (‘Follower’) Farmers**

7. The role of the lead-farmer, as an extension approach, was not performance-based and was not sufficiently understood by the follower-farmer (often leading to resentment), in terms of:
  - The Incentives for the lead-farmers were not adequately linked to performance and follow-up (M&E);
  - Inadequate record-keeping and documentation (in follow-up with the follower-farmers) resulted in the neglect of the ‘follower’ farmers;
  - CEOs concentrated more on the lead-farmers rather than use the lead-farmers to develop participating farmers more effectively and sustainably;
  - The lead-farmers were more ‘beneficiaries’ than a ‘conduit’ to development of the participating farmers on CA and KRAs were not clearly defined;

<sup>18</sup> Tertiary education is an institution; it conditions our choice of subjects in high school and sets the level of grades we should aim for in final exams. Will FISRI condition the behaviour of the society members to the same extent as tertiary education does? That is the purpose of the second meaning of institutionalisation.

- The funding for farmer field schools, which provide a platform for learning for the lead-farmer, was not catered for and affected their performance. Despite this absence, most camps visited relied on farmer field schools for training lead-farmers;
- 8. Follower-farmers were essentially ‘members without benefits’ as they were not eligible to qualify for the e-vouchers at any stage (regardless of their performance or potential). Some of them came on board due to initial indications that they would also receive some input support and obviously lost interest when the support was not forthcoming. The absence of a budget allocation for the follower-farmers meant that they do not receive any targeted technical support, apart from what they are assumed to be receiving from the lead-farmer;
- 9. While there was evidence of CA demonstration plots organised by lead-farmers, the quality of some demonstration plots failed to portray the real potential of CA due to poor management and lack of attention to detail and, as such, failed to fulfil their function. The loss of the demonstration effect as the farmers out-scale means that the cumulative effects of CA are also lost. Technical capacity among CEOs to establish demonstrations was also perceived to be limited and there is need for training in that aspect. There was also need to recognise the limited capacities among public extension systems and training should have gone ‘beyond CA’ to include other technical and agronomic aspects, especially relating to non-traditional crops introduced in rotations and interactions;

### Capacity-building and Training

- 10. Training and capacity-building appears to be un-programmed as it was not based on a comprehensive training needs assessment (across CEOs, lead-farmers, follower-farmers, agri-dealers and agri-contractors) and was sometimes out-of-synch with the farming cycle, was ad-hoc and too brief to be effective, and there was insufficient follow-up and verification to ensure comprehension and application. There was no comprehensive training programme, while capacity-building was taking place at all levels (with MAL staff, agri-dealers, agri-contractors, lead-farmers and to some very limited extent, with participating farmers). The training was not well aligned with the training needs of the farmers as it was not based on training needs assessments that would have guided the topics for the specific target beneficiary category. Evident also was that the interventions, while targeted, were of varying quality in terms of ‘fitness for purpose’, with some training being out-of-sync with season, while some was too brief to be of any real effect, as was the case with tractor operators on agri-business principles, maintenance and record-keeping, which was conducted in one day only. Indeed, the need for expediting the roll-out of tractors was clearly expressed but necessary minimum training was required but not conducted;
- 11. MAL DACOs and CEO are critical to CA adoption, but the BEOs were excluded in the process, with the result that communication, logistical support and efficiencies were often less than effective. Unfortunately, they are currently not as effective in ensuring adoption of the technologies due to poor logistical support in terms of fuel provision, allowances and transport repairs. The functionality of the system is further compromised in the project by the omission of the Block Extension Officer, who is the direct supervisor of the field staff and who ensures closer follow-up of implementation of activities;
- 12. In the absence of a performance-based approach to FISRI implementation at camp level, the effectiveness of the capacity-building and training could have had greater impact if targeted at ‘early adapters’ and more progressive lead-farmers and follower-farmers using a more ‘open’ system. The frame used by the FISRI project in implementing CA was inefficient compared to those used by other players in terms of scope, application of the lead-farmer model, targeted farmers, capacity-building approach and the use of the e-voucher concept as an incentive for improved performance, among others. As a process project, FISRI should have opted for an ‘open’ participation to all farmers so as to identify and empower ‘early starters/adopters’. The support to lead-farmers should have been based on performance allowing for weaning-off of those not making the grade and indeed avoiding a possible situation of farmers developing a dependency on inputs;

### E-Voucher Scheme and Mechanisation

- 13. The e-voucher scheme successfully facilitated the development of the agri-dealers and increased access to inputs to the lead-farmers in an innovative and cost-effective manner. However, the e-voucher was not performance-based and did not evolve to meet the on-going development needs of the farmer. Agro-dealers have opened shops beyond their district headquarters and have expanded their stock composition to cater for CA. The e-vouchers are a major innovation for outreach (including improvements to targeting, M&E and anti-fraud).

Further enriching of the farmer database by the MTZ will provide researchers and other users a data set on the demand and spread of inputs, equipment and services in the country. The e-vouchers have been a cost-effective means of decentralised distribution of inputs and services. Rather than relying on a centralised project distribution system, as is still the case with FISP, the agro-dealers take care of the distribution as they source the inputs from their suppliers and do their best to capture the effective demand in the district. The e-vouchers were targeted at the lead-farmer and the CEOs to permit them the experience of CA.

This assessment found that the link between the lead-farmer and the participating farmer was the weakest and suggests that the e-voucher could be used differently in future. E-vouchers were not evolving and adjusting to farmer needs and were certainly not performance-based. For example, the e-voucher could be given to different farmers every year as a reward for past performance and to enhance the capacity to implement CA on a wider base of practicing farmers, while retaining and up-scaling those who are already in the scheme;

14. Mechanisation is key to up-scaling CA, but there are challenges in terms of availability of equipment, knowledge of its use and maintenance and delays in accessing mechanised services as early as possible in the season:
  - This shortage of draft power has led to late crop establishment, a matter which was one of the justifications for use of planting basins prepared by hoe well before the start of the rains. A farmer so prepared will plant early at the start of the rains whereas before, he had to wait for the ground to be wet then plough. However, the use of the chaka hoe for basin making has come up against the constraint of the hoe in general which oxenisation programmes have been trying to solve since the 20<sup>th</sup> Century. FISRI is one in line of projects that are promoting faster, larger and earlier land preparation. Planting basins may be earlier but they are not faster or lighter on the practitioner. The ox-drawn ripper solves the scale and speed limitation of the chaka hoe and conventional ploughing. Going further up the ladder, the tractor drawn ripper and planter improves upon the ox-drawn implements. FISRI is set to score many good things with mechanisation. This stage, however, is accessible largely by hire, removing the control of time from the hands of the farmer to the operator. As long as the barrier to entry is the cost of the tractors, operators will enter the business until profits become zero. To avoid over-concentration in the hands of a few the financing institutions should vary the repayment period from 3 years when the demand is high to 6 years when the demand is in equilibrium with supply. Keeping the number of operators high in this manner will open access to more farmers;
  - As the farmers associations grow financially, the ZNFU may find it profitably to lend to the group. Past experiences on group ownership of machinery suggest private ownership or by organisations closely associated than farmer groups is to be preferred;
  - The contractors have had problems with machinery operations due to limited knowledge of the machinery regarding operation, maintenance and storage. Tractors and attachments were often found in the sun and un-oiled. The lack of designated maintenance provider means that the operators seek their own solutions such as tying pieces with ordinary wire in the absence of an approved clip;
  - The limited training spread to the use of inputs such as the herbicides, fertilisers and seed. The operation of attachments that apply these inputs is yet to gain proficiency in a lot of operators. The service contractors could offer a more complete package to the farmers;
  - The time to observe the mechanisation services is short, it is only in October 2012 that the operators will have one year of data. The record keeping is yet to be standardised by the Ministry of Agriculture and Livestock. Meanwhile the performance of the business model can be estimated from the excellent repayment rates achieved by the 10 operators who are surpassing expectations;
15. The 'static' approach to the application of the e-voucher scheme may have inadvertently contributed to the creation of a 'dependency syndrome', with an over-focus on provision of inputs to selected lead-farmers without a performance-based approach to its on-going application. The manner in which the targeted farmers participated in the project made them the exclusive recipients of the support.

The Beneficiary Assessment Study revealed that most farmers asked for an increase in the value of the e-voucher and the extension of the same to participating farmers, for the way forward. No other component of the project was highlighted as being equally important on the way forward, depicting a strong tendency for reliance on the e-voucher in CA application;

## Gender Mainstreaming and Food Security

16. Gender Mainstreaming and related social aspects were not adequately addressed in FISRI and there were no specific targets for outcomes, outputs and activities in this regard. The three phases have not clearly defined the desired gender equity objectives, outcomes, outputs and indicators. No gender analysis appears to have been done before the inception of each phase in order to feed the results into programming (an updating of the log-frame). The differential gender roles, strategic and practical gender needs, differential access and control of resources by women and men were not systematically addressed in the project. Women and men were considered as a homogenous group, yet there are gender relations and social issues that affected women and men differently. There were no clear staff responsibilities and accountabilities with regards to gender integration. CA capacity-building has not included gender equity, social and HIV/AIDS;
17. Food Security is not comprehensively addressed in the project design, though it is focused on food production and availability, as it has not addressed nutrition requirements, food conservation, value-addition, food storage and food safety aspects. FISRI has enabled households to have adequate staple food for household consumption as a result of increased productivity. The CA approach used in FISRI offered production diversification through crop rotation and provided an opportunity for dietary diversification. M&E systems have not provided trends of food sufficiency within the lead-farmers and participating farmers over the past three phases of FISRI;

## Market-orientation and 'Commercialisation' Aspects

18. FISRI was predominantly production-oriented in its approach to promotion of CA, which was a necessary requirement at the early stages of the project cycle. However, attention to market aspects (in terms of market access, market information, supply/value-chain development etc.) and access to finance is not addressed in FISRI and must be incorporated into CASU (or other relevant programmes). In the absence of better organised market information and facilitation services to small-holder farmers, there are many instances of lead-farmers and in particular, participating-farmers, not being able to sell their produce on the market as they are either unaware of the market linkages available (such as ZNFU) or in some cases, they have come up against unscrupulous buyers who dupe them into selling at very low prices;

## M&E and Project Design Issues

19. Overall, as a cross-cutting issue, the project M&E was very weak arising from a mix of project design and implementation challenges that affected project performance and efficiency as a result of poor data collection/analysis, reporting and validation/follow-up aspects, in particular:
  - The project design and log-frame for FISRI I was not updated to reflect FISRI II and FISRI III, with the result that sufficient review was not undertaken in FISRI I to ensure that FISRI II and FISRI III were correctly planned and the appropriate M&E systems reinforced;
  - At least 3 different versions of a log-frame exist and it is unclear which log-frame was adopted and applied to FISRI (as approvals are not evident);
  - Delayed recruitment and deployment by FAO of a project M&E specialist (none existed in FISRI I), and MAL M&E personnel who were not dedicated to FISRI, resulted in no meaningful M&E being undertaken, with the result that poor record keeping at all levels was evident, insufficient data collection and analysis was undertaken and an integrated working system of M&E was not established (between MAL and FAO). FAO technical back-stopping needs to be strengthened and integrated with MAL;
  - Progress Reporting from the district level was not sufficiently standardised and rigorously enforced to ensure proper evidence-based data collection to enable impact and trend analysis, while these reports were not sufficiently verified by on-the-spot checks and more frequent field visits;
  - In terms of its application at CEO and lead-farmer level, within the broad M&E framework, data collection is a function at all levels of operation as it follows the effects of the implemented activities. Specific data and information must be collected in the field by the CEOs and lead-farmers to form a basis of evidence. In FISRI, this function was in its infancy and there was no evidence of feedback resulting from analysis of the data so far. The effect of the project was to be traced through definite emerging trends at participating farmer level. No data was collected from these farmers by the lead-farmers and by CEOs, introducing redundancies in the M&E system;



- In terms of CA ‘best-practice’, the need for collection of data from on-going activities cannot be over-emphasised, as this will provide evidence-based learning and allow for adaptation of CA over the long-term. The absence of standard frameworks for data collection across project sites resulted in variations in the quality and quantity of data collected and consequently the reliability of the data being used;
- In terms of application at agri-dealer and agri-contractor levels, the challenges faced by agro-dealers in attending to farmers requires documentation and analysis. Because the e-voucher did not change over time, farmers confronted the agro-dealer with request to buy items not on the e-voucher or to buy only seed and fertilisers - in line with FISP. Regarding the Agro-dealers, the information they have will be better organised by an overall structure issued from the project management. It will be particularly important to know the profiles of clients accessing the services for cash and e-vouchers and the timing of such services. Data from the Contractors may reveal a clearer segmentation of the farmers and their spatial distribution;
- Gender disaggregation and social issues: M&E system has not collected sex disaggregated data, social and gender qualitative information. The little sex disaggregated data that has been collected has not been effectively analysed and utilised for evaluation and future programming purposes;

## 5.0 Key Lessons Learned

1. There is a need for stronger integration and co-ordination of the key stakeholders and players in CA in Zambia in order to capitalise on the significant efforts achieved so far and to enhance the peer review, learning and leverage of resources and talent available through donor, private sector and research/educational institutions. Synchronisation and co-ordination of projects should have been better implemented in terms of:
  - The CA Taskforce;
  - CAA;
  - MPCU Co-ordinating Forum needs to be reinforced/formalised;
  - Capitalise on synergies: FISP; FISRI; CFU; Others (Concern, CARE, Dunevant);
  - There is value in harnessing the strengths of existing initiatives for public good. FISRI would have made greater strides if it took all the best from the existing CA initiatives in the Zambia and rationalised it for wider dissemination. As a government co-ordinated project it would have constituted a platform for exchange of ideas on CA. The element of ‘competition’ among players in CA would have been substituted by ‘complementation’;
2. Maize and fertiliser should not have been made available under the FISRI e-voucher scheme, particularly when maize and fertiliser were available under FISP (as a farming input project). As a consequence, the FISRI project may have been inadvertently misconstrued by farmers as an input project (due the inclusion of maize and fertiliser in the e-voucher scheme), somewhat compromising its impact as a CA promotion project. The thrust of FISRI was the CA application, thus support must have been for those critical components that reinforced adoption of CA principles of minimum soil disturbance, crop rotation and crop residue management:
  - Focus on inputs (in particular, maize and fertiliser);
  - Focus on ‘commodities’ of maize/cotton (a traditional commercial farmer produce) rather than other options e.g. legumes, soya etc.;
  - The promotion of the CA/FISRI agenda was compromised by the inclusion of maize seed and fertiliser in the FISRI e-voucher scheme as this made the project appear like FISP, an input support project. The thrust of FISRI was the CA application, thus support must have been for those critical components that reinforced adoption of CA principles of minimum soil disturbance, crop rotation and crop residue management;
  - The value of the lead-farmer is questioned due to the disparity between the lead-farmer and follower-farmer regarding the e-voucher scheme. Going forward, the application of the e-voucher scheme requires a review. In hindsight, the e-voucher inputs should have had more performance-based elements attached to their issuance, subjecting beneficiaries to performance-based efforts and targeted more at high-achievers/high-performers, including graduating participating farmers (to lead-farmers) and experienced lead-farmers to mentors (of new lead-farmers);



3. There was no natural progression and evolution within FISRI in terms widening the levels of participation and the development/graduation (through performance-based approaches) of:
  - Progressive lead-farmers becoming mentors
  - Progressive participating-farmers becoming lead-farmers
  - Evolution of the e-voucher system (to reflect indexation, needs, development stage etc.)
  - Certification of progressive CA practitioners to enable them to access finance etc.

The FISRI project selected a set of farmers that it worked with exclusively over a 3-5 year period. This was cardinal to ensure following-up of changes in the farmers 'mind-set' and in the farming practices being applied. Unfortunately the model did not provide for 'early-adopters' to advance beyond the level they were found; that is a lead-farmer was always a lead-farmer, and yet some of these farmers could graduate to more responsible status of 'mentors'. Equally the participating-farmers were always participating-farmers without any opportunity for them to graduate to become lead-farmers. Another dimension of the absence of progression in the FISRI was with the e-voucher scheme, whose value remained the same over the period and the components did not reflect farmers' developmental stage or the inflation index;

4. Concentration of key interventions and activities into 'specialised nodes' would serve to minimise risk, maximise capacity-building and enhance training effect, particularly at the early stages of target-farmer development. The 'specialised nodes' would provide services such as ripping, herbicide application (e.g. agri-contractors being trained on use of herbicides, creating synergies in bringing together spraying equipment, procurement of herbicides and application of herbicides more effectively), tractor maintenance, and others of this nature, which would have been concentrated into few hands of 'specialist practitioners'. This would make training more effective, as a few but detailed points of interventions would be created, reducing risk and improving learning. Undoubtedly the strategy would encourage more private sector participation. Diffusion of such service provision would increase with farmers becoming more advanced in their knowledge and uptake of these technologies;
5. A major opportunity was missed to establish meaningful CA best-practice demonstration effect and a foundation for on-going research (through GART) as a result of delayed and/or ineffective M&E and data collection/analysis. In most of the FISRI documentation, it is implicitly assumed that the Senior Agricultural Officer (SAOs) office is able to employ complete enumeration. However, this is not possible and we may be getting far less information than we would if a statistically valid sample were taken. Much effort should be expended to achieve acceptable sample surveys so that conclusions from such surveys may be accepted with a known degree of reliability. Because it is costly and practically impossible to attain 100% enumeration of all households in the district, sampling should be an important component of the FISRI monitoring system. The sampling process should recognise and take into account inherent variations in farming systems and agro-ecological conditions. The exact stratification scheme is likely to differ from district to district, depending on each district's specific characteristics. Data should be available at the smallest unit, which in FISRI is the sub-plot of the participating farmer, the lead-farmer, and the camp officer. This is a rare opportunity to collect rich data at the farm level which can contribute to CA research and progression;
6. Focus on CA technical issues without attention to gender relations, equality and social issues can reduce the impact of CA in terms of its adoption, impact and sustainability. Lack of consideration of socially ascribed gender roles in CA, the differential access and control of benefits and resources, practical and strategic gender needs of women and men in the community can reduce CA adoption, up-scaling, impact and sustainability;

## 6.0 Key Recommendations

### 6.1 Balance of FISRI III

1. In the remaining 6 months of FISRI III, address the urgent requirement to improve the governance, M&E and reporting to improve project performance further. This will also assist in the preparation for the transition to CASU (in early 2013) by ensuring adequate systems and procedures are reinforced to maximise the seamless relay from FISRI to CASU in terms of improved integration between MAL and FAO technical backstopping and improved camp-level data collection and analysis under a tighter M&E system (integrated into MAL systems);
2. FAO technical backstopping should be more integrated with MAL systems and personnel on an on-going operational basis. Consideration should be given to the relocation of the existing FAO M&E and Agronomist staff to MAL, on a semi full-time basis, to better integrate with MAL structures and to provide real-time proactive technical advice and back-stopping within MAL in order to: (i) address existing issues for improvement within FISRI; and (ii) prepare the necessary systems and structures that will be required for a 'seamless transition' from FISRI to CASU;
3. An 'End-Line Survey' should be conducted by the end of FISRI III, based on the Baselines undertaken in FISRI I and II, to determine the impact and benefit of FISRI through survey techniques, to compensate for the absence of meaningful M&E evidence-based data for FISRI (i.e. absence of consistent progress reports, as well as systematic verification and spot-checks over the project cycle);

### 6.2 Future Programming (CASU) and Promotion of CA

#### CA 'Best-Practice' Approaches and Innovation

4. CA needs to be better 'institutionalised' in terms of its integration into policy, research and educational institutions, and needs to be better promoted and incorporated into existing farmer practices through more effective best-practice demonstration approaches. Sometimes adhering to CA requirements, such as the need for maintaining the same planting stations, compromises standard agronomic principles (e.g. correct plant population). The CA Task Force within MAL should actively link with other programmes through the CAA platform. Such a platform brings together all the challenges and valuable lessons learned by practitioners and the industry regarding CA application. There is need to include CA into MAL training programmes, work plans for sustainability should be facilitated and inclusion of CA into the curricula of tertiary institutions to ensure potential extension workers are introduced to CA technologies. There is need to strengthen the existing CA platform for learning and documentation, CAA is already in place, it therefore just needs to be strengthened;
5. CA best-practices need to be more effectively documented for evidence of CA impact in terms of climate-smart approaches, increased yields and reduced input and labour costs. CA research & development needs to be strengthened by closely working with research institutions (e.g. GART and ZARI) to adapt CA to the Zambia-specific situation and the different agro-ecologies. These adaptations could include the integration of livestock issues into CA activities to enhance adoption and sustainability. Issues of pasture availability for livestock during the Winter and use of alternative sources of mulch to reduce pressure on crop residues could compliment CA programmes. A CA policy document could lay the framework for promoting the best-practices and provide important guidelines and support;
6. There is a need for greater cross-collaboration and co-ordination between the various CA initiatives underway, in particular between FISRI (and CASU) and CFU, to promote greater peer-review and information-sharing, while the ultimate beneficiary in the guise of the Zambian farmer benefits from this collective effort. Enhanced and faster development can be achieved when an objective rationalisation of past initiatives is used for planning and implementation of future activities and in this regard, future government CA initiatives actively utilise all existing relevant experience on CA for the benefit of Zambia and the Zambian farmer;

#### Lead-Farmers and Participating ('Follower') Farmers

7. CA programmes must ensure greater engagement at participating-farmer level – a bottom-up approach – with greater emphasis on CA extension approaches being targeted at this level, promoting best-practice approaches linked to performance-based incentives.

The role of the lead-farmers continues to be needed, but needs to be redefined for best-effect. Interaction with the beneficiaries at field-level is the key to enhancing learning and future improvement in project activities. Such platforms should be encouraged and documented. Best performing lead-farmers should be identified and documented for greater and more effective 'lesson learning';

### Capacity-building and Training

8. Capacity-building needs to become more sustainable and replicable through a Train-the-Trainer (ToT) approach linked to performance-based incentives. Embarking on a ToT programme to sustain capacity-building of CA in the farming community is thus a key success factor for future initiatives;
9. A comprehensive Field Training Manual needs to be developed and adopted to ensure more consistent and relevant training and capacity-building is achieved, which should include among other topics, the following: (i) CA concept, principles, and benefits; (ii) A variety of basic CA options (manual, animal and tractor-powered); (iii) Possible extension approaches, including the requirements; (iv) Simple examples of gross margin calculations for CA and non-CA; (v) General herbicide issues. Such a Manual will ensure more effective training and capacity-building;

### E-Voucher Scheme and Mechanisation

10. E-Voucher Schemes need to become more evolutionary in nature through linkage with the inflation index, greater recognition of the farmer development stage and increased focus and emphasis on performance-based approaches to use of incentives in order to minimise the risk of creating a 'dependency syndrome';
11. Mechanisation needs to be scaled-up in developing 'commercial' CA, but care is needed in ensuring economically viable approaches/business models are adopted, while availability of equipment, access to finance/leasing and development of alternative ownership models need further exploration and focus. The use of the chaka hoe for basin-making has come up against the constraint of the hoe in general, which oxenisation programmes have been trying to solve since the 20<sup>th</sup> Century. FISRI is one in a line of projects that are promoting faster, larger, earlier, and environmentally-friendly land preparation methods. Planting basins may achieve earlier results but they are not faster or lighter on the practitioner. The ox-drawn ripper solves the scale and speed limitation of the chaka hoe and conventional ploughing. Going further up the ladder, the tractor drawn ripper and planter improves upon the ox-drawn implements. This stage, however, is accessible largely by hire, putting the control of time of planting in the hands of the operator instead of the farmer. As long as the barrier to entry is the cost of the tractors, operators will enter the business until profits become zero. To avoid over-concentration in the hands of a few, the financing institutions should vary the repayment period from 3 years when the demand is high to 6 years when the demand is in equilibrium with supply. Keeping the number of operators high in this manner will open access to more farmers and retain support for the viability of the operator;

### Gender Mainstreaming and Social Aspects

12. Gender Mainstreaming and 'latent' social issues need to be addressed in any CA adoption programmes, as issues around mechanisation, cash-crops and access to markets have residual effects which affect women's involvement and empowerment:
  - Future, programming should take into account differential access and control of resources between women and men, gender roles, as well as strategic and practical gender needs;
  - Develop clear gender equity outcomes and indicators and establish clear gender mainstreaming responsibilities and accountabilities within project staff and the extension delivery systems. Appoint a project Gender Focal Person (GFP), from within current project staff, with clear terms of reference;
  - Gender equality and women empowerment, HIV/AIDS and leadership should be in-built in CA extension service delivery and capacity-building;
  - M&E systems should collect sex disaggregated data, gender and social issues information which should be analysed and utilised for improved gender-sensitive programming;
  - There is need for development of a gender strategy and guidelines that can provide guidance on how to mainstream gender in CA activities;
  - Consider integration of diverse food products with value-addition and market linkages to provide increased incomes for women;

### **Market-orientation and ‘Commercialisation’ Supports**

- 13.** In order to achieve economies of scale and to avoid an over-emphasis on production-oriented CA approaches, there is a need to incorporate ‘commercial’ best-practice to CA development in CASU. This can be achieved through strengthening of the supply-chain, enhanced value-chain development (through greater emphasis on value-adding/processing activities), an increased focus on market access (local, regional, national and international) and market support measures, including market information, with greater emphasis on farmer organisation, marketing and access to seasonal working capital/trade finance;

### **Governance, Project Management, Reporting and M&E**

- 14.** Project M&E needs to be comprehensively addressed and strengthened in CASU, with greater emphasis on integrated (not parallel) systems being developed in MAL, with active on-going support from FAO technical backstopping, including active deployment of FAO project staff in MAL to enhance more effective integration and synergy;
- 15.** A project of the size of FISRI (and CASU in the future) should have had a dedicated management function and FISRI should have been much more closely integrated with FAO Representation activities. The future CASU project should have a full-time project manager (or CTA), and should also have a clearer definition of FAO’s technical backstopping arrangements;
- 16.** The oversight function as exercised by the Steering Committee and the Technical Committee was not well documented. The future CASU project must make sure that all meetings are correctly minuted and available to all stakeholders;
- 17.** Likewise, for a project of this size, FAO should better organise its Project Task Force meetings and make the records available to all stakeholders;

## **7.0 Annexes**

### **7.1 Final Evaluation Team - CVs**

### **7.2 Terms of Reference of the Final Evaluation (and Final Evaluation Team)**

### **7.3 FISRI Beneficiary Assessment Report**

### **7.4 Aide Mémoire (08.05.2012)**

### **7.5 Consultation Meetings Held**

### **7.6 Reference Documents (and Information Requirements)**

### **7.7 Position Paper: Conservation Agriculture 'Best-Practice' Approaches**

### **7.8 Position Paper: Lead-Farmers and Participating ('Follower') Farmers**

### **7.9 Position Paper: Capacity-building and Training**

### **7.10 Position Paper: E-Voucher Scheme and Mechanisation**

### **7.11 Position Paper: Gender Mainstreaming and Food Security**