

Impact Evaluation Terms of Reference: Climate Smart Agriculture Zambia Programme, 2016 to 2022

Introduction

The Department for International Development (DFID's) mission is to help eradicate poverty in the world's poorest countries and this is underpinned by our set of values:

- Ambition and determination to eliminate poverty
- Ability to work effectively with others
- Desire to listen, learn and be creative
- Diversity and the need to balance work and private life
- Professionalism and knowledge

The Service Providers (SP) will be expected to embrace the DFID supplier protocol and in addition demonstrate Corporate Social Responsibility (CSR) by taking account of economic, social and environmental factors in an ethical and responsible manner, complying with International Labour Organisation (ILO) standards on labour, social and human rights matters.

Value for Money (VfM) is important for all DFID programmes and as such, in all our activities, we will seek to maximise the impact of DFID's spend on programmes and encourage innovative ideas from our partners and suppliers to help us to deliver Value for Money.

The Department for International Development (DFID) leads the UK Government's work to end extreme poverty. DFID works directly in 28 developing countries across Africa, Asia and the Middle East. The UK Government's long-term vision for the Middle East and North Africa region is a prosperous, stable region based on open, democratic societies with greater social, economic and political participation of its people.

DFID has transformed its approach to transparency, reshaping our own working practices and pressuring others across the world to do the same. DFID requires the Service Provider receiving and managing funds, to release open data on how this money is spent, in a common, standard, re-usable format and to require this level of information from immediate sub-contractors, sub-agencies and partners.

It is a contractual requirement that the Service Provider complies with this, and to ensure they have the appropriate tools to enable routine financial reporting, publishing of accurate data and providing evidence of this DFID – further IATI information is available from;

<http://www.aidtransparency.net/>

Evaluation¹ Objective

To design and conduct an impact evaluation of the Climate Smart Agriculture Zambia programme to determine its impact on resilience, increased income, food security and social benefits at household level².

¹ The evaluation is primarily for learning purposes.

² Based on a longitudinal outcome survey, using a stratified sample of conservation farming adopters and conventional farmers, using maize as proxy indicator.

Scope

The evaluation is focused on the implementation and impact of the DFID funded CSAZ project. The scope is as follows:

- Geographical: 22 CSAZ implementation districts, covering two of the three Zambian climatic zones;
- Temporal: starting with a baseline in January/February 2017 and running until March 2022; and
- Target Groups: climate smart agriculture farmers who will form the intervention arm of the evaluation and a control group of traditional farmers. The farmers will be split into the three groups of Conservation Farming tillage practice (hoe, animal draft and mechanised CF MT) against like conventional hoe, animal draft and mechanised practices.

Deliverables

The following key evaluation products will be produced:

- Inception Report (max 30 pages, not including annexes). The Inception Report should include a very clear methodology to show how the evaluation will assess whether the challenges to CA (e.g. weed and pest control, livestock, competition for mulch, crop options for rotation, land rights, fire ...) have been addressed and resolved by CSAZ.
- Evaluation Baseline Report (max 25 pages, not including annexes). The baseline evaluation should include identified constraints of CF in Zambia so that these can be accommodated in a revised ToC, after the first year of the CSAZ.
- Mid-Point Evaluation Report (max 25 pages, not including annexes);
- Final Evaluation Report (max 50 pages, not including annexes and an executive summary of max 4 pages); and
- Manuscript proposal for Peer Review Journal (approximately 15 pages).
- Interactive webpage on evaluation with appropriate infographics and data visualisations

Methodology

Given the challenging nature of CF³, the evaluation will follow a mixed methods approach, combining quantitative information on the impact of the intervention, with qualitative information on how and why changes took place. Triangulation of results should be built into the evaluation design as much as possible.

The evaluation should be able to provide clear evidence of change and understand as much as possible the attribution of the CSAZ project towards these changes.

The evaluation approach should ensure that it complements uses and builds upon the monitoring processes of the CSAZ project. How this will work in practice should be agreed in the inception period and be set out in the Inception Report.

It is essential that any evaluation methodology taken forward adheres to the ethical evaluation policies of DFID, which can be found in the DFID Evaluation Policy⁴. The evaluation should be clear about how it will address and mitigate any ethical issues uncovered during the inception phase of the evaluation.

³ Bidders should explain how they will collect good quality data given this environment.

⁴ <https://www.gov.uk/government/publications/dfid-ethics-principles-for-research-and-evaluation>

The evaluation must also adhere to the principles of accuracy and credibility.

a) Quantitative Approach

A key deliverable of the evaluation will be to generate robust evidence with accompanying attributable results. It is therefore suggested that the evaluation follow an experimental Impact Evaluation design approach for the EQs that require an impact difference-in-difference measurement.

While a Randomised Control Trial (RCT) approach would be preferable DFID is aware that an RCT may not be possible (e.g. as the project does not determine who participates in the project), so we are therefore open to other methods such as Propensity Score Matching (PSM). A final decision on what Impact Evaluation approach to use will be made during the inception phase of the pilot, based on issues of feasibility and a guarantee that ethical concerns can be addressed

The unit of analysis for the Impact Evaluation element will be the household. It is estimated that a household sample of up to 2,500 could be required for this evaluation (including arms for treatment control/comparison). The control/comparison group will probably need to be larger due to expected attrition during the course of the evaluation.

Data collection is expected to be through household questionnaires. Three data points are expected i.e. a baseline, mid-point and end-point.

In terms of inputs into the power calculation, example minimum effect sizes could include:

- detect a minimum 30% difference in productivity i.e. crop yields per hectare (using maize as a proxy);
- detect a minimum 20% difference in household income (based on the value of production minus costs and income from other additional sources);
- detect a minimum 10% food security⁵;
- detect a minimum 15% difference in labour requirements and time saving in crop production (using maize as a proxy);
- 95% confidence interval; and
- 80% power.

The above figures are for illustrative purposes only. The final sample size, indicators, effect sizes and power calculation will be based on the bids received and will be refined and agreed during the inception phase.

Please note that ethical clearance from a recognised national body in Zambia must be obtained for survey work.

Disaggregation of data is expected by:

- Hoe tillage;
- Animal traction tillage; and
- Mechanised tillage.

By:

- Male headed households; and

⁵ Using measures such as the FAO Household and Individual Dietary Diversity: www.fao.org/docrep/014/i1983e/i1983e00.pdf

Annex A

- Female headed households.

And by:

- Small;
- Medium; and
- Large farmers.

More innovative primary data collection methods suggested during the bidding process and inception period will be taken on board, if appropriate.

Secondary data should also be used where it is appropriate and robust enough.

b) Qualitative Approach

The RCT should be supplemented with additional quantitative data collection that can provide evidence on contribution. The focus of the qualitative approach should be on providing evidence for:

- The 'How' (i.e. process): evaluating how well the CSAZ project was implemented. This information should both complement and provide a direct link to the data collected on impact; and
- The 'Why': generating information that can explain the reasons behind the changes observed in the quantitative data.

The qualitative data should make an assessment of the ToC (flag D) both in terms of looking at "theory failure" (i.e. that the evidence demonstrates that the theory itself, or elements of it, do not work) and "implementation failure" (i.e. that the theory could still hold but that the implementation was poorly executed). It is expected that at the mid-point, the evaluation also feeds into a further update of the ToC.

Qualitative data collection methods could include the approaches such as semi-structured Interviews and focus groups.

It is assumed that qualitative information will be collected and analysed at three points during the pilot - the baseline, mid-point and end-point.

Draft Evaluation Questions

The draft Evaluation Questions (EQs) are listed below. There will be scope to review the EQs, source of evidence and evaluation criteria during the inception period of the evaluation. The Service Provider will be required to suggest additional EQs.

Draft Evaluation Questions	Source of Evidence	Evaluation Criteria
Were there additional social and livelihood benefits for Climate Smart Agriculture adopters compared to non-adopters?	Farmers, CFU, extension officers	<i>Impact Sustainability</i>
Was food security higher for Climate Smart Agriculture adopters compared to non-adopters? If so, why?	Farmers, CFU, extension officers	<i>Impact Sustainability</i>
Did Climate Smart Agriculture adopters increase their income (return from production and income from other sources) by a greater amount than non-adopters? If so, why did this happen?	Farmers, CFU, extension officers	<i>Effectiveness Sustainability</i>
Did Climate Smart Agriculture adopters find that Conservation Farming minimum tillage practices capture and retain moisture more efficiently than conventional tillage practices? If so, why do they think this is the case? Was this more beneficial in times of droughts or floods as compared to conventional tillage farmers?	CFU, researchers, farmers, extension officers	<i>Effectiveness Sustainability</i>

Annex A

<i>Note: soil data to be collected through separate research but triangulated during evaluation with perception data.</i>		
Did Climate Smart Agriculture adopters realise greater productivity (yield per hectare) than non-adopters? If so, why did this happen?	CFU, Farmers, extension officers	<i>Effectiveness</i>
Does Climate Smart Agriculture farming provide time and labour savings over traditional farming? If so, how were these time and labour savings used?	Farmers, CFU, researchers, extension officers	<i>Effectiveness</i>
Does Climate Smart Agriculture farming provide cost savings over traditional farming? If so, how were these cost savings used?	Farmers, CFU, researchers, extension officers	<i>Effectiveness</i>
How effectively did the CFU implement the Climate Smart Agriculture project?	DFID, farmers, NGOs, donors	<i>Efficiency Relevance</i>
What is the institutional sustainability of support for CSA after the end of the programme?	CSA stakeholders, CFU, private sector, donors	<i>Sustainability</i>
Were there any wider CSA impacts on the rural economy including potential benefits and costs for non-farming households e.g. through less severe seasonal food price swings and for reduced opportunities for casual labour for landless households?	Farmers, CFU, private sector, NGOs	<i>Impact Effectiveness</i>

In addition to the above draft EQ, the evaluation should aim to capture positive and negative unintended effects of the project.

Recipient

The main recipients are DFID Zambia, Conservation Farming Unit and the wider community involved in CSA in Zambia and abroad, including development partners, researchers and academics.

DFID Coordination

The evaluation will be conducted under the name of DFID. The independent evaluation team will report regularly to DFID Zambia's PSD Adviser, who is Senior Responsible Owner for the CSAZ project. Technical evaluation support will be provided by the DFID Zambia Results Adviser.

DFID will act as the evaluation secretariat. The secretariat will oversee the tendering process, deal with financing and payments and act as first point of contact on contracting issues.

Annual reviews of the evaluation will be conducted as part of DFID's annual review cycle but will require full cooperation from the evaluation team. These annual reviews will be determined by DFID's internal reporting requirements.

The evaluators will be free of control from organisational influence. An Evaluation Advisory Group (EAG) will be established to guide the strategic direction of the evaluation, providing comments on key reports and outputs meeting at least once before and after each major survey event. Members of the EAG will be finalised before the Inception Report but will include CFU and DFID.

The EAG will be responsible for commenting on draft reports, providing clear stakeholder advice to the evaluation team. At the end of the evaluation, DFID will also be responsible for drafting a Management Response to the evaluation report.

Timetable

Annex A

In terms of the evaluation timetable is set out below (to be further refined during the inception phase)⁶. All milestones must be agreed by the Evaluation Advisory Group.

Inception/Baseline Phase		
Inception Report	Agreement on issues such as: <ul style="list-style-type: none"> - ToC - EQs - Evaluation methodology (including confirmation of approach and sampling strategy) - Assessment of secondary data - Approach to data collection and analysis - How evaluation complements, uses and builds upon project monitoring information - Key ethical standards that will be observed during the evaluation - Draft communications and dissemination plan 	Two months after signing of contract
Evaluation Baseline Field Work	Field survey questionnaires to be tested, followed by roll out of in-country collection of qualitative and quantitative data	Preferably four months after signing of contract but seasonality considerations to play a major role.
Baseline Report	Report covering qualitative and quantitative information collected during the baseline.	Two months after field work.

Mid-point Phase		
Evaluation Field Work	Collection of in-country collection of qualitative and quantitative data	September 2019
Mid-Point Report	Report covering qualitative and quantitative information collected at mid-point. Summary of lessons learned for the CSAZ project, including for the ToC. Any updates to the approach outlined in the Inception Report.	November 2019

End-point Phase		
-----------------	--	--

⁶ The evaluation design will seek ways of obtaining information from all the main harvests covered by the programme. This will require the field work to include discussions with farmers about any intermediate year and may require a two tier survey, with some farmers selected for more intensive surveying.

Annex A

Evaluation Field Work	Collection of in-country qualitative and quantitative data	September 2021
Final Report	Report covering the following key points : <ul style="list-style-type: none">- finalised response to EQs (findings, conclusions and recommendations)- limitations of the evaluation- commentary on the ToC- general findings, conclusions and recommendations	January 2022
Presentation of Final Report (In-country seminar)	Audio-visual presentation of the Final Report to key stakeholders.	February 2022
Dissemination of Report	In line with the Communications Plan.	March 2022

The issue of transparency of information must also be upheld during the evaluation process but with care taken to protect confidentiality when appropriate.

Proposed List of Stakeholders

- DFID
- Conservation Farming Unit
- Ministry of Agriculture
- FAO country office
- European Union country office
- National CA Task Force Platform (convenes twice a year and provides the membership which includes the Ministry of Agriculture, NGO's, the private sector and other agencies promoting CF/CSA)
- Vuna (DFID's CSA Regional Programme)
- African Conservation Tillage Network
- Agro private sector companies
- Agro dealers
- Musika
- Farmers – adopters and non-adopters
- Research institutions

Reporting & Deliverables

Reports listed above (Deliverables section) will need to be of sufficient quality for external publication. The Communications Plan for the evaluation will also need to give thought to how to disseminate the results of the evaluation in innovative ways in order to build awareness of the evidence generated.

While the final evaluation products will be produced in English, the executive summary and website should also be translated into seven Zambian local languages. The Service Provider will propose how findings of the evaluation work will be converted into an on-going system for exchanging experiences amongst farmers.

Dependencies & Constraints

The contract will be issued in one phase with break points. The breakpoints can be found at the end of:

- inception phase (this will include a break point when an decision will be made on if and how the evaluation will continue, including a scale up or down on the original plan); and
- Mid-point phase.

The Evaluation Team will be expected to supply their own logistic requirements including office space and transport.

The Team is also expected to undertake the evaluation independently, recruiting its own staff for survey design, data collection and analysis, and report production. It will be expected that the same firm will be retained throughout the project period, depending upon satisfactory completion of deliverables, to ensure consistency of survey execution and to build on historical knowledge.

The evaluation will be published in full. Data sets will be made available by DFID to other researchers for analysis, replication and secondary analysis, with due consideration given for the privacy of respondents.

The service provider will however work closely with (but independent of) the implementing entity, the CFU.

If the main contract is terminated early, the future evaluation fieldwork may not proceed. The decision to conduct further fieldwork in the event of this happening, will be based on the ongoing need at the point the main contract ends.

Duty of Care

The Service Provider is responsible for the safety and well-being of their Personnel (as defined in Section 2 of the Contract) and Third Parties affected by their activities under this contract, including appropriate security arrangements. They will also be responsible for the provision of suitable security arrangements for their domestic and business property.

DFID will share available information with the Service Provider on security status and developments in-country where appropriate. DFID will provide the following:

A copy of the DFID visitor notes (and a further copy each time these are updated), which the Service Provider may use to brief their Personnel on arrival.

The Service Provider is responsible for ensuring appropriate safety and security briefings for all of their Personnel working under this contract and ensuring that their Personnel register and receive briefing as outlined above. Travel advice is also available on the FCO website and the Service Provider must ensure they (and their Personnel) are up to date with the latest position.

	DFID RISK SCORE – Zambia
FCO Travel Advice	1
Host Nation Travel Advice	1
Transportation	2

Annex A

Security (SS)	1
Civil Unrest	2
Violence / Crime (SS)	2
Terrorism (SS)	1
War	1
Hurricane	1
Earthquake	1
Flood	1
Medical Services	1
Overall Rating	1.25

1 Very Low Risk	2 Low Risk	3 Medium Risk	4 High Risk	5 Very High Risk
Low		Medium	High Risk	

For further information, please consult the FCO travel advice:

<https://www.gov.uk/government/world/zambia>

Risks Assessment

The overall risk rating of the evaluation is **moderate**. The full list of risks and mitigating actions are set out below:

Risk	Likelihood	Impact	Mitigation
1. Higher than expected attrition of control group leads to inability of statistically relevant findings	Unlikely	Major	It is expected that the evaluators will over sample in the control group to avoid this situation.
2. That the data collection takes place in outlier crop year leading to measurement of impacts that misrepresent the average yearly effects	Possible	Major	The evaluation design will increase the number of data collection points from two to three.
3. The evaluation is poorly managed and delivered by the winning bidder	Unlikely	Major	A strong Evaluation Advisory group will be established to oversee quality of the work. Key evaluation products will be submitted to EQUALS.
4. Project starts before the evaluation is ready to be taken forward	Likely	Minor	The evaluation design will be constructed in such a way as to minimise any distortionary effects e.g. picking treatment areas where the intervention is relatively new.
5. That collected data is of poor quality and undermines the credibility of the evaluation	Likely	Major	The evaluation team to establish strict quality control measures e.g. through quality training of enumerators and/or supporting quality data

		collection at CFU.
--	--	--------------------

Background

The UK Department for International Development (DFID) has designed a £25 million Climate Smart Agriculture Zambia (CSAZ) programme to be implemented over a five year period, 2016/7 to 2020/1. The Conservation Farming Unit (CFU), a local not-for-profit organisation is the potential implementing partner.

The purpose of the programme is to help poor farming communities adapt to the impacts of climate change on their lives and livelihoods. Other benefits of the programme will include improved nutrition and food security.

DFID would like to subject this programme to an evaluation to determine what impact it will have on the livelihoods and resilience of Zambian farming families who depend on rain fed agriculture, and why. Currently, the impact difference between conventional and conservation farming lacks a robust evidence base. The attached Business Case (flag A) provides details of anticipated programme impacts, outcomes and outputs, target groups, timescale, geographical coverage and the impact of the intervention on gender.

This evaluation, therefore, will have strong value for money by both helping inform future DFID programming, as well as similarly-designed programmes in Zambia and the Southern Africa region.

These terms of reference seek to help DFID:

- Design an impact evaluation, and
- Carry out the impact evaluation according to the agreed design, report, publish and disseminate the findings.

An evaluability assessment that determined the programme was evaluable was conducted in March 2016 (flag C). Key objectives of the assessment were:

- Examining whether the proposed scope of the programme is evaluable, specifically what would be evaluable within the timeframe of the programme, and what would not.
- Examining the overall intervention logic/theory of change and making a judgement on the value (or otherwise) of testing the overall theory behind the programme compared to evaluating individual component parts and assumptions therein.
- Considering what the programme should be compared against – e.g. how to assess its effectiveness.

Conservation Farming⁷ is a farming technique introduced in the US Dustbowl in the 1930s to reduce erosion, and has since been adopted in many developing countries because of its potential to protect water and soil resources, while increasing yields.

⁷ The CSAZ Business Case and the CFU proposal (Flag B) contain a detailed discussion of CF, including its contribution to poverty reduction and inherent challenges of adoption. The IE Inception Report should elaborate on these.