



**Climate Smart Agriculture:
Capturing the synergies between Adaptation, Mitigation and Food Security
GCP/INT/139/EC**



Inception Workshop

**Ibis Garden Hotel - Lusaka
9th -12th January 2013**

Final Report

Introduction

The greatest challenge the vast majority of human population is called to face nowadays is the eradication of hunger and extreme poverty. At the same time, countries have to confront the impact of climate change, which poses among the most serious, immediate and long term threats to the efforts of achieving sustainable development with striking negative effects on food security and rural development.

Thus a holistic approach that incorporates the multiple objectives of food security, and adaptation to and mitigation of climate change is needed in agricultural development and investment planning to enable agricultural producers and policy-makers to make informed and effective choices. Climate Smart Agriculture (CSA) addresses this challenge by identifying and capturing synergies between climate change mitigation, adaptation and food security in agricultural production systems and policy-making, and minimizing their potential negative trade-offs. CSA approach realizes the context specific nature of food security, adaptation and mitigation benefits of agricultural practices, as well as barriers to their adoption. Aligning and integrating climate change, agriculture and food security policies are needed to provide the required enabling environment. In addition, estimating the costs and sources of funds for climate smart agriculture investments is an essential step to achieving the needed transition

In order to enhance efforts to sustain agricultural production in the face of climate change the Government of Zambia through the Ministry of Agriculture and Livestock in collaboration with the Food and Agricultural Organisation of the United Nations is implementing the project *Climate Smart Agriculture : Capturing the synergies between Adaptation, Mitigation and Food Security*. The project's outcome is to strengthen the institutional capacity in scaling up and implementation of CSA options to increase community resilience. This outcome will be achieved through four outputs: (i) *Establishing an evidence base for planning, developing CSA options and review of CSA related policies*; (ii) *Formulation of country-owned CSA frameworks*; (iii) *Development of CSA investment proposals and identification of financing mechanisms*, and; (iv) *Building capacity in planning and implementation of CSA initiatives*.

The inception workshop was an essential feature of the project, designed to facilitate consultation with key stakeholders in creating a country-specific project log-frame and work plan, as well as establishing and strengthening collaboration. These are key elements needed both to attain the project outputs set out above as well as to build country ownership of the project outputs from the beginning. Stakeholder knowledge and experience in the design of project activities and identification of their roles therein are cornerstones of projects outcomes.

The project inception workshop was held from the 9th to the 12th of January 2013 at the Ibis Garden Hotel in Chisamba, Zambia. A total of 27 participants across different sectors attended the workshop, these included representatives from Government Ministries and Departments; Civil Society; Academia; Research Institutions; FAO and the Cooperating partner. The participants list is presented in Annex I.

1. Project Launch

The project was launched by the Permanent Secretary of the Ministry of Agriculture and Livestock represented by the Director of Agriculture Ms Mary Chipili. The other dignitary who made opening statements was the Zambia Office FAO Representative ad interim Ms Farayi Zimudzi. The key message from the launching speeches was the need to tailor the project to the Zambian institutional, policy and technological context and circumstances.

2. Day 1-Presentations: Summary of the CSA Project framework and potential activities

A number of presentations were made to set the scene for the constructive engagement of the participants towards the achievement of the goals of the inception workshop. The following are the introductory presentations that were made to set the scene for the workshop.

a) A synopsis of the Climate Smart Agriculture by Andrea Cattaneo, the Project Leader and Aslihan Arslan, Natural Resource Economist. This presentation outlined in summary the following key items:

- i. Objectives of the CSA Project
- ii. Examples of CSA practices & barriers to adoption
- iii. Project framework
- iv. CSA initial priority areas for Zambia
- v. Planned project outputs and
- vi. Expected Outcomes from the Workshop

b) Zambia Agricultural Research Institute (ZARI) work on climate smart agriculture practices. The presentation focused both on past and ongoing research work conducted by ZARI. The highlights of the following studies were presented:

- i. A project on the *effects of agro-forestry plants* on soil fertility restoration and maize productivity in a degraded *Miombo* woodland in the Petauke district of eastern Zambia.
- ii. Research on socio-ecological resilience and vulnerability in southern Zambia.
- iii. Soil Organic Carbon Quantification Estimates in the Trans-frontier Conservation Area of Western Zambia.
- iv. Soil survey design and methodology development for
- v. conducting field soil samples collection, laboratory analytical tests, soil data interpretations and information dissemination for the implementation of the UN-REDD & ILUA II project under the Forestry Department in Zambia.

c) The Dean of the School of Agricultural Sciences of the University of Zambia (UNZA), Dr Mick Mwala, presented capacity building opportunities in CSA with the following highlights:

- i. The research on the effect of climate change in Zambia assessed through climate variability in the three agro-ecological regions of Zambia based on precipitation using a baseline of 1970 to 2000 and projections for 2010 to 2070.
- ii. Scenarios on mean temperature and Green House Gas Emissions (GHG) sources and estimations over the same baseline referred to above.
- iii. Baseline and mitigation scenarios developed. The scenarios covered agriculture and food security, human health and natural resources (wildlife and fisheries).
- iv. Additional issues for which UNZA has the capacity to contribute to CSA in Zambia within the framework of the CSA project. These include:
 - Diversification in crop production including legumes
 - Utilization and development of crops with stress tolerance.
 - Identification of altered abiotic and biotic environments due to climate change.
 - Modeling of impact of climate change on agricultural production
 - Information for policy guidance
 - Identification and development of improved crop varieties with stress tolerance and management practices for sustainable agricultural production
 - Training in human resources on identified CSA related topics of relevance to Zambia

Day 1 - Breakaway group discussions

The group breakaway discussions were based on three main questions aimed at soliciting the Zambian context-specific focus of the project within the overall project framework. The following tables summarize the observations and recommendations from the discussions of the three groups.

Table 1- Summary of group observations and recommendations on CSA Practices

Group	Project Output related question	Summary observations and recommendations
<p>1-CSA Practices and barriers to adoption.</p>	<p>- What are the agricultural practices contributing to increased productivity for food security and, where possible, mitigation? - What are the barriers to the adoption of these practices?</p>	<p>Major Opportunities for promotion of CSA were identified as:</p> <ul style="list-style-type: none"> • Awareness that CC is happening. • Crop diversification (Available choice of crops) • Agriculture is an important sector mainly affected by CC. • Existing research and extension institutions. <p>Agricultural practices differentiated between the warm and drier areas and the high rainfall areas were identified as follows: Practices for drier areas (Region I&II) included:</p> <p>a) Conservation agriculture</p> <ul style="list-style-type: none"> • Crop rotation • Minimum tillage (basins , ripping) • Soil cover • Agro-forestry • Heat and drought tolerant crops • Intercropping <p>b) Crop & livestock integration</p> <ul style="list-style-type: none"> • Use of inorganic and organic fertilizers • Use of bio char • Water harvesting <p>Practices for wet areas (Region 3) included:</p> <ul style="list-style-type: none"> • Crop rotation • Fish farming • Liming • Bio char • Adaptable crop varieties/ livestock integration • Agro forestry(e.g. improved fallows) • Decreased use of chitemene practice

		<ul style="list-style-type: none"> • Agriculture & deforestation interface <p>Barriers to CA adoption identified included:</p> <ul style="list-style-type: none"> • CA is labour intensive (weeding) • Less access to CA tools and equipment • Dependence on free inputs • Poor extension messages. <p>Barriers to change in land use included:</p> <ul style="list-style-type: none"> • Lack of land title • Traditional and cultural practices • Lack of marketing opportunities for other crops (e.g. legumes) • Lack of improved seeds (agro forestry) • Communal grazing. <p>Policy related barriers included:</p> <ul style="list-style-type: none"> • Land titles or some other form of tenure security should be provided • Viable exit strategies for projects should be developed to ensure continuity • Build cost sharing implementation strategies btw national and international donors • Include CSA approach in the projects • Strengthen awareness on CSA and market participation • Develop indigenous trees for agro-forestry • Develop improved fallows to decrease deforestation
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Table 2- Summary of group observations and recommendations on CSA Capacity building needs in Zambia

Group	Project Output related question	Summary observations and recommendations
2- CSA Capacity building needs.	What are the priority needs for capacity building to achieve CSA implementation for policy-makers, researchers, extension?	<p>a) Identified three levels for capacity building (policy makers, researchers, extension agents and local communities).</p> <p>b) Identified capacity building needs stratified for each identified level: awareness creation and sensitization for policy makers; technical training and tools for researchers & extension agents; training, information, communication, awareness and sensitization for communities</p> <p>c) Identified key drivers for capacity building: parliamentary committees, local/traditional authorities for policy makers; agriculture, fisheries, forestry and livestock departments for research and extension; farmer organizations, youth and women groups, NGOs, FBOs and CBOs for communities.</p> <p>d) Identified delivery mechanisms include the use of workshops, media, short and long term training, e-learning, conferences, and publications.</p>

Table 3- Summary of group observations and recommendations on CSA Enabling mechanisms in Zambia

Group	Project Output related question	Summary observations and recommendations
3-CSA enabling mechanisms	What are the enabling mechanisms (policy, institutional, financing) required to facilitate adoption of CSA?	<ul style="list-style-type: none"> a) Need for climate proofing of the draft agricultural policy b) Need for the CSA project synergistic linkages to the CAADP investment plan c) Need for facilitation for coherent, coordinated and harmonized policy development and implementation including networking among various sectors in relation to CSA. Reduce fragmentation of efforts, capacities and resources d) Need for the MAL to open “<i>its agriculture box</i>” to other stakeholders who have an equal stake. How to reduce <i>compartmentalization</i> despite the mandate of MAL as a facilitator of agric interventions. e) Strengthen and enhance existing current financing commitment f) Leveraging CSA financing with other interlinking resources (e.g. climate change funding sources) g) CSA project design seen as an opportunity to demonstrate value addition and partnerships h) Implementation mechanisms closer to the communities

Day 2 - Proceedings: Next steps and scoping of target areas and knowledge gaps for CSA in Zambia.

The second day proceedings were focused on the provision of the next practical steps required towards the implementation phase of the project and a scoping of the possible target areas for the identified priority areas that were reaffirmed by the working groups on the first day of the inception workshop: sustainable land management (including conservation agriculture, integrated systems of crops, livestock and/or fisheries and the agriculture-forestry interface).

4. Next steps

Based on the building blocks of the CSA logical chain (illustrated below) the next steps described focused on the actions to be taken in assessing the situation:

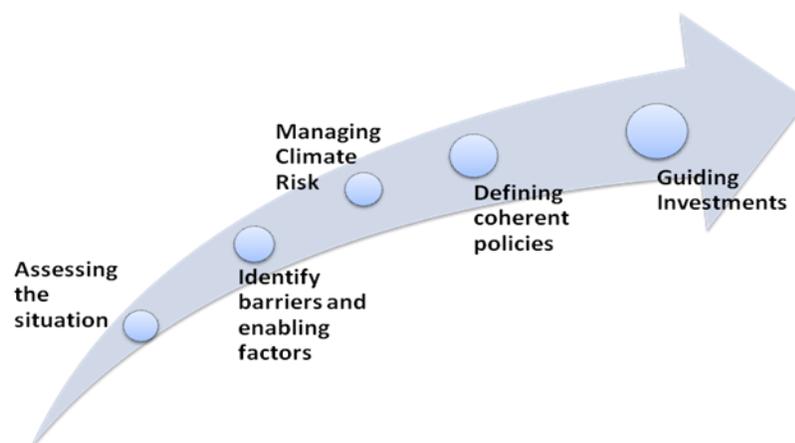


Figure 1- Building blocks of the CSA logical chain

4.1 Assessing the situation:

a) Available data & data collection

Each priority area activity needs to be assessed using the following data:

- Household and production data: available from Rural Incomes and Livelihoods Surveys (CSO/MAL/FSRP) and Post Harvest Surveys (CSO)
- Input and output prices (to be collected/calculated)

- GIS data: Standard Enumeration Area shape files available (two provinces missing, Northern and Southern)
- ILUA 2 on agriculture & deforestation links (ongoing collection)
- Most climate & agro-ecological variables collected
- Historical weather data: precipitation and temperature
- Downscaled climate simulation data (to be obtained from UNZA)
- More primary data may be needed in provinces on CA, drivers of land use change, and livestock/fisheries systems
- Institutional network mapping data
- Ongoing projects in provinces: information & collaboration

b) *Participatory scenario building*

During the inception phase of the project, a preliminary exchange with stakeholders in Zambia provided some focus on topics of interest, and the tools the project can use to address these issues were identified. However to move beyond this preliminary identification phase, a participatory scenario building will be used as a useful instrument to engage stakeholders using a participatory approach to *identify and quantify scenarios*. The first step is developing a storyline and identifying the key outcomes of interest that can be influenced by policy. The scenario building approach will be undertaken through a workshop by contracted experts in this area.

c) *Institutional network mapping*

Institutional network mapping will be used to understand how decisions are made and policies are formulated related to food security, adaptation and mitigation. This exercise will help in identifying institutions that are key to transitioning to a CSA approach in development policy making, as well as ensuring the evidence base that will be created by project is fed into the policy making process in Zambia.

d) *Call for student proposals*

- Funding available for 4 Masters' students and the research of one PhD student
- Open to all Zambian nationals (including in-service personnel) already enrolled in a graduate program, prepared based on identified topics for Zambia
- To be administered by UNZA through a letter of agreement (to be prepared)
- The most appropriate timeline to attract students will be determined in cooperation with UNZA and other higher education institutions

e) *Outlining analyses to be undertaken*

- Conduct analysis of barriers and enabling factors to adoption and synergies & tradeoffs between various practices
- Cost & Benefit analyses of identified practices that are essential parts of an investment proposal

- Risk management analyses to put in context the novel ways climate change affects risks in decision making at the household and national levels

f) Capacity building activities

- Capacity needs assessment
- Coordination between climate change and agricultural policy (e.g. CAADP, MAL participation in UNFCCC)
- Development of the CSA investment proposals

4.2 Day 2- Breakaway group discussions outputs

Three groups were formed to identify: (i) *Zambian specific potential* geographical areas for the identified priority project activities; (ii) on-going CSA related activities and gaps in knowledge base on CSA in Zambia; (iii) country specific coordination mechanisms for the implementation of the project. The discussion on the third priority activity on agriculture and forestry interface was deferred to a special meeting to be held by the project core team and the forestry department (especially the UNREDD Coordination office) and technical taskforce. The following tables provide summaries of the outputs from the group discussions.

Table 4- Potential geographic focus for SLM activities in Zambia

Group	Project Output related question	Summary observations and recommendations
<p>1. Sustainable Land Management (SLM; including CA and Agro forestry)</p>	<p>1) Which provinces and districts have the highest potential for targeting CSA interventions?</p>	<p>Potential geographical target areas</p> <p>Region 1- has the highest potential due to high vulnerability: Southern, part of Eastern and Western provinces. Potential districts in these provinces included:</p> <p>a) Southern province:</p> <ul style="list-style-type: none"> • Chikankata district (used to be Mazabuka dist): representative of 3 different land arrangements: settlements, traditional and private land titles • Chirundu District Lusitu Area: very vulnerable degraded soils • Sinazongwe Dist, and Gwembe dist. very vulnerable degraded soils <p>Region 2-</p> <p>a) Lusaka province: Potential districts in Lusaka province included:</p> <ul style="list-style-type: none"> • Luangwa • Rufunsa • Chirundu • Chongwe • Sibuyunji • Chilanga <p>b) Western province: Potential districts in Western province included:</p> <ul style="list-style-type: none"> • Sesheke Dist, very sandy soils <p>Region 3: Luapula and Northern Province</p> <p>Potential districts in Luapula province included:</p> <ul style="list-style-type: none"> • Mansa Dist, potential for wetland (dambo) transition and acidic soils amelioration

	<p>2) What other activities related to CSA are ongoing in these locations? Are there any community structures/fora that can be used to reach out to communities?</p> <p>3) Are there clear gaps in the knowledge base where the project could contribute (especially adaptation, food security and mitigation benefits)?</p>	<p>practices.</p> <ul style="list-style-type: none"> • Potential for sedentary systems around Chitemene cultivation systems <p>Existing/Past Activities</p> <ul style="list-style-type: none"> • CFU promoted rippers in Chikankata • GART did training of trainers on CA in Lusitu • GART was involved in AWC (Africa Wildlife Conservation) project that combined CA with wildlife conservation with a goal to increasing food security and to decrease poaching • WB promoted vertiver grass to decrease soil erosion in Southern province. ZARI/TSB should have reports on these. • ZARI promoted cassava in Sesheke, it grows well in sandy soils and improves food security SCAFE had the CA project, but when it ended all activity ceased • FAO project in Sesheke & Siavonga on diversified livelihoods (2 yrs)? <p>Gaps in knowledge base</p> <ul style="list-style-type: none"> • Need to know more on the role of traditional varieties on adaptation • Need to fill gaps in knowledge about integrating improved varieties into existing CA or SLM systems • Agro forestry: need to have better adapted species for all regions • Need to understand better how to introduce new-better fertilizer use (e.g. slow release) • Livestock is a problem in adoption of SLM; need to better understand how to prevent livestock damage on crops. Differences are important between districts • Adaptive species to acidity in the R3 • Rice potential in R3? • Need to develop ways to integrate CSA awareness in extension services <p>Existing Community Structures</p> <ul style="list-style-type: none"> • Henwood Foundation in Sesheke • Kaluli Development Foundation (KDF) in Sinazongwe • Camp Officers (extension agents) can be used to get information/data • There are community cooperatives • Faith based organizations
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Table 5- Potential geographic focus for Integrated livestock, crops and fisheries activities in Zambia

Group	Project Output related question	Summary observations and recommendations
<p>2) Integrated livestock, crops and fisheries activities</p>	<p>1) Which provinces and districts have the highest potential for targeting CSA interventions?</p> <p>2) What other activities related to CSA are ongoing in these locations? Are there any community structures/fora that can be used to reach out to communities?</p> <p>3) Are there clear gaps in the knowledge base where the project could contribute (especially adaptation, food security and mitigation benefits)?</p>	<p>Potential geographical target areas</p> <p>1) Southern province – subject to CC impacts , and has both crops and livestock, potential for aquaculture (already present) - focus on ponds</p> <p>2) Western province – diversification rice/aquaculture, but there is also already livestock</p> <p>3) Eastern province – Second livestock population, major contributor to crop production (cash crops and maize, combine). A lot of FISP funds go to Eastern Province</p> <p>4) Central province – livestock-crops-fisheries (potential focus on aquaculture)</p> <p>Existing/Past Activities</p> <p>1) Southern Province (Kazungula and Chirundu districts)</p> <p>2) Eastern Province (Chama and Mambwe districts)</p> <p>3) Western Province (Senanga and Sioma districts)</p> <p><i>PPCR</i> - Barotse and Kafue Basins</p> <p><i>KAZA</i> - Okavango Zambezi Basins conservation area</p> <p><i>World Fish Centre</i>- Zambezi Basin</p> <p><i>USAID</i> - Eastern Province (Chipata, Nyimba, Lundazi, Katete, Petauke) & <i>COMACO</i> (Mambwe, Chama, Lundazi and Nyimba)</p> <p><i>GRZ-PRP</i> - Lundazi</p> <p>Gaps in knowledge base</p> <ul style="list-style-type: none"> • Climate Uncertainty – information <p><i>PPCR</i> – supposed to be sharing information on early warning system</p> <ul style="list-style-type: none"> • Need for scaling up weather information system • Need for information, education, communication (IEC) on improved technologies and practices <p>Example: <i>CIRC</i> (Community information resource center) – with modem and computer, and translation</p> <ul style="list-style-type: none"> • Preparedness for potential pests (induced by CC)

		<ul style="list-style-type: none"> • Lack of use of indigenous knowledge. Example: Indigenous fish-rice integration (in Mambwe) • Gaps in ability to transfer technology • Limited extension agent –research link • Lack of exchange of information between NGOs and government (too many different voices giving advice to farmers on production systems) and inadequate mentorship of young farmers, loss of institutional memory) • Lack of knowledge of what is happening around the country • Lack of continuity of projects (e.g. CIRC). Projects are not government-owned or community-owned. <p>Existing Community Structures</p> <ul style="list-style-type: none"> • Farmer groups, Farmer’s Union and their District Associations • Cooperatives • CBOs & faith-based generally
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Group 3 - Proposed Institutional coordination mechanisms for project implementation

The following structures (in hierarchical order) were proposed for coordination purposes to be ratified through follow up consultative process with the lead partner (Ministry of Agriculture and Livestock).

Project Steering Committee

The key term of reference would be to provide policy level advice and oversight of the project activities and to ensure project implementation and outputs harmonization with existing CSA related policies in Zambia. Proposed composition includes:

The SC will be chaired by the Permanent Secretary of MAL and will comprise:

- Directors of: Agriculture, Policy and Planning, ZARI, Livestock, Fisheries, Forestry and Natural Resources.
- FAO
- ZNFU
- UNZA
- Ministry of Finance(Climate Change focal point)
- EU delegation representative

Observations and recommendations from the workshop

- Detailed terms of reference to be developed by the core team for review and ratification by the Steering Committee at its first meeting.

Project Technical Committee For Climate Change

The committee will be chaired by the Director of Agriculture with the key focus of providing technical input into the project activities as required by the project and will comprise of technical representation from:

- Department of Agriculture
- PPD
- ZARI
- UNZA
- ZNFU
- GART
- Forestry Department
- FAO
- IAPRI
- Zambia Climate Change Network

Observations and recommendations from the workshop.

- Members of the project technical committee should be chosen for their technical expertise and be currently working in a technical capacity within their institutions.
- This group is envisioned to meet in exceptional circumstances where the steering committee recommends a collective higher technical level intervention or the project core team requires more technical contributions beyond what it can manage through individual consultation with the same institutions and others.

Project Core Team

The project core team will be a lean team of technical staff to facilitate and drive the day to day implementation of activities based on the approved work plan and budget. The Core Team will comprise of:

- Department of Agriculture representative (as the National Project Coordinator) and two other representatives (TSB and ZARI)
- Policy and Planning Department representative (as Deputy National Project Coordinator)
- UNZA representative
- FAO CSA Technical Coordinator

Observations and recommendations from the workshop.

- 1- Because of the large number of activities for which the lead implementation partner is PPD based on the revised work plan by the key partner institutions (DoA, ZARI, PPD, UNZA and FAO) during the workshop, it was recommended that PPD should be nominated as Deputy National Project Coordinator to ensure that there is effective internal (PPD) follow up on the many activities it is leading in implementation (please refer to the revised work plan in annex III). In addition PPD provides overall coordination and monitoring functions of all the programmes of the Ministry of Agriculture, and hence, would provide the necessary linkages and synergies between the CSA project and the mainstream work of the Ministry.
- 2- Each of the chosen institutions are lead implementation partners of a number of activities and the nominated members of the Core Team will be the responsible focal points for project activities under their institutional implementation portfolio, but collectively guiding the day to day delivery of the whole project activities.
- 3- The NPC, deputy NPC and the FAO CSA Technical Coordinator will provide the secretariat and coordination functions of the core team.

Day 3 Proceedings - Moving into Logical Framework

The third day of the workshop was dedicated to the review of the log frame and work plan by the project key partner institutions (Department of Agriculture, Department of Policy and Planning, UNZA and FAO) based on the workshop input from the observations and recommendations from the previous sessions. *The proposed amendments were noted and the Core Team (as soon as it is formally constituted) was tasked to make the necessary changes and adjust the timelines and deadlines in consultation with the lead implementing partners for each of the respective activities in the log frame and work plan.* The work plan in annex III shows the revised activities, sources, responsible FAO backstopping expert(s) and the national implementing partners for each of the respective activities.

Annex I. Logical Framework for Climate Smart Agriculture Project: Capturing the Synergies between Mitigation, Adaptation and Food Security: Timeframe: 2012- 2014

Design Summary	Indicators/Targets (by end of Project unless otherwise stated)	Data Sources	Assumptions
<p>Impact: Contribution to the achievement of Millennium Development Goals 1 <i>Eradicate Extreme Poverty and Hunger</i> and 7 <i>Ensure Environmental Sustainability</i>, as well as Article 2 of the UNFCCC through Climate Smart Agriculture (CSA)</p>	<p>Evidence-based policies and Projects to support the development of the smallholder agricultural sector effectively integrate climate change adaptation and mitigation and successfully link to new sources of climate finance (after end of project)</p>	<p>Ministries of: Finance; Development Planning; Agriculture, Environment and Climate Change documents. Project finance documents; Project annual reports and web site; revised and/or new legislative documents</p>	<p>Declining political commitment to climate change and food security, and unwillingness to address them in a harmonized way</p>
<p>Outcome: Capacity to promote CSA and access to CSA financing increased</p>	<p>1. One agricultural Project with explicit climate smart components (based on this project output) achieved before end of this project 2. One CSA project proposal submitted for funding for climate smart agriculture Projects 3. 25 percent increase in policy documents linking climate change and agriculture before end of project</p>	<p>Ministry of Finance and Ministry of Agriculture documents Project finance documents; Project annual reports and web site Relevant line ministry documents; revised and/or new legislative documents</p>	<p>Continued strong support in relevant ministries Continued demand/financing for carbon sequestration Projects</p>
<p>Outputs: 1. An evidence base for developing and implementing policies and investments for CSA is built</p>	<p>1.1 One Meta-database of household datasets & soil sequestration data by agro-ecological zones 1.2 Country report evaluating household & institutional constraints to securing CSA & analyses of potential policies to address those constraints 1.3 Country evaluations of existing programmes, policies & institutional frameworks for CSA</p>	<p>1.1-1.3 Primary (household and institutional surveys) and secondary data (household survey data, updated soil sequestration databases, FAOSTAT agro-ecological data)</p>	<p>Relevant information can be collected, through both primary and secondary sources</p>

Design Summary	Indicators/Targets (by end of Project unless otherwise stated)	Data Sources	Assumptions
2. Country-owned strategic frameworks for climate-smart agricultural activities are formulated	2.1 One strategic plan or “roadmap” that prioritizes CSA options and their means of financing is developed through a process of participatory stakeholder dialogue either within an existing policy framework (e.g. CAADP or NAPs) or as a new and additional policy document.	2.1 Workshop reports; Policy document repository, and with country permission, posted on web site; Project annual M& E report	Members of relevant government agencies and regional bodies remain interested in seeking synergies between food security and climate change in the agricultural sector
3. Climate smart agriculture investment proposal is formulated and possible financing, including from climate finance is identified	3.1 An investment proposal prioritising implementation of the most promising CSA options is formulated with MAL based on research findings, costs and benefits 3.2 Appropriate institutional interface with climate change mechanisms identified 3.2 An appropriate business models for accessing and utilizing climate finance to support climate smart agriculture is developed	3.1-3.2 Project data as listed in 1, Project annual M& E report	Feasible investment options exist; cost effective mechanisms for accessing climate finance are possible
4. Capacity for evidence-based planning, implementing and financing climate smart agriculture is built among stakeholders	4.1 Linkages established or strengthened between climate change and agricultural policy processes 4.2 Participatory M&E strategy designed and agreed by partners 4.4 Information from M&E systems incorporated into planning and decision-making at appropriate levels	4.1 Project M&E system	National partners and stakeholders willing and able to actively engage in capacity building
Indicative Activities: 1.1 Meta-database of existing household level datasets with information relevant for adaptation and mitigation documented and available for analysis 1.2 New institutional dataset needed for CSA evidence base constructed 1.3 Meta-database of soil	1.1 One meta-database of existing household-level datasets with information relevant for adaptation and mitigation documented and available for analysis. 1.2 One new institutional-level datasets 1.3 One meta-database of soil sequestration potential and farming practices linked to household dataset	1.1 Documentation and meta-database of household-level dataset documented and available: hard copy and electronically 1.2 Dataset from new institutional-level surveys documented and available: hard	Project members, partners and stakeholders work together to produce evidence base Country partners actively contribute to policy simulation model development Materials generated are useable inputs into policy processes

Design Summary	Indicators/Targets (by end of Project unless otherwise stated)	Data Sources	Assumptions
<p>sequestration potential by farming practices linked to household and institutional datasets</p> <p>1.4 Conceptual framework for identifying CSA strategies developed</p> <p>1.5 Statistical analyses of policy factors that increase agricultural production and adaptive capacity, and capture synergies with mitigation objectives</p> <p>1.6 Development of a policy simulation model (in tandem with the development of country-owned strategic frameworks)</p>	<p>1.4 Working paper and journal article on conceptual framework</p> <p>1.5 One country report documenting results of statistical analyses, one policy brief summarizing the results</p> <p>1.6 Policy Simulation Model documentation</p>	<p>copy and electronically</p> <p>1.3 Documentation and meta-database of emissions and soil sequestration potential, formatted to link with household datasets, available in hard copy and electronically</p> <p>1.4-1.6 Project document repository and web site, journals, number recipients of hard or e-copies; web-based knowledge sharing platform</p>	<p>Policymakers and stakeholders remain engaged and interested in Project outputs</p>
<p>2.1 Evaluation of existing programmes, policies and institutional frameworks affecting the development, financing and implementation of CSA conducted</p> <p>2.2 Review of consistencies and contradictions between major agricultural and climate change policy documents including MGDS, CAADP, and NAPAs and NAMAs</p> <p>2.3 Identification and costing of priority CSA options, based on outputs from Result 1.1 and input from in-country stakeholders</p> <p>2.4 Facilitated policy dialogue to prepare CSA strategic framework document</p> <p>2.5 CSA strategic framework document finalized, building on Result 1.2, 1.3 and outputs 2.1a-c,</p>	<p>2.1 Country-level reports, working papers and policy briefs detailing results from country-level institutional mapping and evaluation of existing policies related to agricultural sector development, food security and climate change</p> <p>2.2 One comprehensive review of MDGs, NAPAs, CAADP and other relevant policy papers</p> <p>2.3 Country reports detailing priority CSA options and costs of investments; number of in-country stakeholders involved in identifying CSA priority options</p> <p>2.4 Documentation of Facilitated policy dialogue between food security, agricultural and climate change policy-makers; number of policymakers, by ministry, attending facilitated policy dialogue</p> <p>2.4 Number of evidence based results used in development of final CSA Strategic document;</p>	<p>2.1 Project document repository, and with country permission, web site</p> <p>2.2 Report by policy dialogue facilitators; Records of attendance at dialogue meeting; workshop evaluation</p> <p>2.3-2.5 Project document repository, and where relevant and with country permission, web site</p>	<p>Country partners actively engaged in working towards policy coherence across relevant agencies; actively engaged in development of roadmaps</p> <p>Sufficient data available to construct cost estimates</p>

Design Summary	Indicators/Targets (by end of Project unless otherwise stated)	Data Sources	Assumptions
and input from in-country stakeholders	number of technical staff and policymakers contributing to CSA Strategic document 2.5 Final CSA Strategic Framework Document		
3.1 Development of CSA investment proposal, within the context of CAADP 3.2 Country-specific business model for linking climate finance to smallholder agriculture developed 3.3 Project impact assessment undertaken	3.1 Business model documentation for each partner country 3.2 Final investment Project proposal, with detailed information on financing mechanisms and application of business model for including smallholders 3.3 Document of investment Project protocols for M&E and Project impact assessment	3.1 Project document repository, and where relevant and with country permission, web site 3.2 Government documents stating endorsement and approval of investment proposal; project documents submitted to financing sources 3.3 Project document repository, and where relevant and with country permission, web site	Sufficient demand for carbon sequestration Projects in the carbon markets Feasible financing mechanisms and instruments exist
4.1 Construction of web-based knowledge sharing platform to facilitate iterative learning across stakeholders 4.2 Support to country national PhD and Masters students on Project-related work 4.3 Training of agricultural and climate change policy-makers on issues of climate smart agriculture 4.4 Support for agricultural policy-makers in attending national and international climate change policy processes 4.5 Preparation and dissemination of policy briefs on climate smart agriculture	4.1 Documents detailing iterative information sharing process and online learning facility Interactive web site; of “hits” to web site disaggregated by materials accessed 4.2 Number of students supported; amount of funding provided; number of Master’s theses and PhD dissertations produced 4.3 Number of agricultural policy-makers attending training courses; training course evaluations 4.4 Number of agricultural policy-makers attending international and national climate change policy negotiations; 4.5 Three info briefs prepared for policy-makers	4.1 Project web site; URL; Webmaster 4.2 Research partner institutions 4.3 Training course evaluations/reports; Project Annual reports	National partners and stakeholders willing and able to actively engage in capacity building

Annex II. Work Plan

Activities	Sources	Indicators	Oversight	Partners
1.1 Meta-database of existing household level datasets with information relevant for adaptation and mitigation documented and available for analysis	RILS data and other secondary sources (e.g. ILUA)	1.1. Constructed and documented databases of existing household-level datasets with information relevant for adaptation and mitigation available for analysis.	MAL-NPC with Core Team	(CSO & IAPRI & UNZA)
	Missions/field visits; desk studies; literature review; key informants; BTOs	1.1.2. Stocktaking of CSA related projects carried out, on-going or planned in the country and other relevant qualitative information compiled in a systematic way useful for further work and for report	MAL-NPC with Core Team	ZARI, Forestry Dept, CFU, GART
1.2 New institutional datasets needed for CSA evidence base constructed	in country consultant still to be identified	1.2.1. new institutional-level datasets constructed	MAL-NPC - Core Team	
1.2 New institutional datasets needed for CSA evidence base constructed	in country consultant still to be identified	1.2.2. Map of CSA decision makers' networks and linkages	MAL-NPC - Core Team	

1.3 Meta-database of historical climate data, agronomic data and soil C sequestration potential by farming practices linked to household datasets	Global satellite data, FAO Soil Data, Global Agro-Econolical Zones data	1.3 data base for soil carbon sequestration created and linked to HH data sets	MAL-NPC - Core Team	ZARI in collaboration with Prof. Smith, UNZA, Forestry Dept (REDD+)
1.4 Conceptual framework for identifying CSA strategies developed	Stocktaking and results from analysis from 1.1 above	1.4.1 Working paper and 1.4.2 journal article on conceptual framework	MAL-NPC - Core Team	
1.5 Statistical analyses of policy factors that increase agricultural production and adaptive capacity, and capture synergies with mitigation objectives	Outputs from 1.1 and 1.2 above	1.5.1 Country report documenting results of statistical analyses and 1.5.2 policy brief summarizing the results	MAL-NPC - Core Team	PPD, UNZA, Provincial focal points to provide feedback
1.6 Development of a policy simulation model (in tandem with the development of country-owned strategic frameworks)	1.6 Policy Simulation Model documentation: *) Extension service programs *) Micro-insurance schemes *) Safety net programs *) Access to market	1.6 Policy simulation model developed, carried out and documented	MAL-NPC - Core Team	PPD and international partner/s

2.1 Evaluation of existing programs, policies and institutional frameworks affecting the development, financing and implementation of CSA conducted in Zambia	Results from 1.1; 1.2;1.3;1.5; 1.6 Plus: *) Extension service programs *)Role of private sector in CSA *) Micro-insurance schemes *) Social protection programs *) Access to input and output market	2.1 Country-level reports, working papers and policy briefs detailing results from country-level institutional mapping and evaluation of existing policies related to agricultural sector development, food security and climate change. Number of evidence based results used in development of final CSA Strategic document.	MAL-NPC - Core Team	PPD lead partner, ToRs to be developed
2.2 Review of consistencies and contradictions between major agricultural and climate change policy documents including PRSPS, CAADP plans, NAPAs and NAMAs	1.2 above and documents mentioned	2.2 One comprehensive review of PRSPs, NAPAs, NAMAs and other relevant policy papers (and other documents identified at workshop)	MAL-NPC - Core Team	PPD lead partner, ToRs to be developed
2.3 Identification and costing of priority CSA options, based on outputs from Result 1.1 and input from in-country stakeholders	Results from 1.1; 1.5; and other ad hoc data collection to be decided	2.3 Country reports detailing priority CSA options and costs of investments; number of in-country stakeholders involved in identifying CSA priority options	MAL-NPC - Core Team	PPD, National consultant to be identified
2. 4 Facilitated policy dialogue to prepare CSA strategic framework document	Participation to conferences, national and int.al negotiations etc;	2.4. Documentation of Facilitated policy dialogue between food security, agricultural and climate change policy-makers; number of policymakers, by ministry, attending facilitated policy dialogue. Number of technical staff and policymakers contributing to CSA Strategic document	MAL-NPC - Core Team	ACF (Ag Consultative Forum) and IAPRI
2.5 CSA strategic framework document finalized, building on Result 1.2, 1.3 and outputs 2.1-2.3, and input from in-country stakeholders	Outputs 1.1, 1.2, 1.3, 1.5. 2.1-2.3	2.5 Final CSA Strategic Framework Document	MAL-NPC - Core Team	MAL-NPC

3.1 Country-specific business model for linking climate finance to smallholder agriculture developed	Evidence provided by outputs 1 and 2 above	3.1 Business model documentation for each partner country	MAL-NPC - Core Team	MAL and Ministry of Finance
3.2 Development of investment proposal	Note formulated by Leslie and commented by Andrea, Giacomo and Romina	3.2 Final investment Project proposal, with detailed information on financing mechanisms and application of business model for including smallholders	MAL-NPC - Core Team	PPD and UNZA-AgEcon
3.3 Development of Project monitoring and evaluation, and impact assessment mechanisms	M&E framework and work plan	3.3 Document of investment Project protocols for M&E, and Project impact assessment	MAL-NPC - Core Team	MAL-NPC and PPD
4.1 Construction of web-based knowledge sharing platform to facilitate iterative learning across stakeholders	Project documentation	4.1 Documents detailing iterative information sharing process and online learning facility Interactive web site; of "hits" to web site disaggregated by materials accessed	MAL-NPC - Core Team	UNZA
4.2 Support to country national PhD and Masters students on Project related work	call for proposal, selection of students based on interesting and potential CSA practices coming from inception workshop, Field visit and lit review	4.2 Number of students supported; amount of funding provided; number of Master's theses and PhD dissertations produced	MAL-NPC - Core Team	UNZA
4.3 Training of agricultural & climate change policy-makers on issues of climate-smart agriculture		4.3 Number of agricultural policy-makers attending training courses; training course evaluations	MAL-NPC - Core Group	MAL-NPC
4.4 Support for agricultural policy-makers in attending national & int'l climate change policy processes	Important national and international conferences, negotiations etc.	4.4 Number of agricultural policy-makers attending international and national climate change policy negotiations;	MAL-NPC - Core Group	MAL-NPC
4.5 Preparation and dissemination of policy briefs on climate-smart agriculture	All project outputs	4.5 Three info briefs prepared for policy-makers	MAL-NPC - Core Group	NAIS leading, all partners and relevant NGOs involved