CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

CTCN Technical Assistance
Response Plan

Country:	Zimbabwe
Request Identification Number:	2015000080

Title:	*Developing a Climate-Smart Agriculture Manual for University level and Professional Level Agriculture Education in Zimbabwe*

Summary of the CTCN Technical Assistance

The CTCN request for technical assistance for developing a Climate Smart Agriculture Manual (CSA) is based on the fact that there is a lack of climate change education and practical climate change approaches among the current agriculture extension workers, providing professional services to Zimbabwe's largely majority rural farming community and newly resettled farmers in Zimbabwe's agriculture community. The National Climate Change Response Strategy identified the need to promote climate smart agriculture as part of the overarching issues in Agriculture and Food Security under the STRATEGY of strengthening capacity to generate new forms of empirical knowledge, technologies and agricultural support services that meet emerging development challenges arising from increased climate change and variability. According to the Ministry of Agriculture, Mechanization and Irrigation Development (MAMID), during the Curriculum review workshop held in July 2015, there is need to provide CSA training to the current and future crop of agriculture extension workers and agricultural college students on climate change issues. There is also need to mobilize support to ensure extension workers receive CSA education to be able to build resilience to climate change in the farming communities they operate in.

Most of the farmers lack adequate knowledge and training on climate change in general, let alone climate-smart agriculture and sustainable environmental practices, which further increases vulnerability and risk to agriculture and the environment. Many smallholder farmers continue to follow environmentally unsustainable practices of conventional tillage, unsustainable waste management practice, cutting down trees and use the slash and burn methods, and flood irrigation (in a water stressed region), further increasing forest degradation and soil infertility due to low moisture content. There is also a widespread use and dependency on synthetic fertilizers and harmful chemicals in crop production. These harm the environment through greenhouse gas emissions like nitrous oxide, reduced soil capacity to retain moisture and nutrients.

The problems the country is facing emanate, mainly from climate change, unsustainable farming methods and lack of training of extension officers on climate change adaptation and mitigation through climate-smart agriculture – hence the CTCN request. The current agriculture education syllabus does not holistically address climate change issues, mitigation and adaptation operational issues including Climate Smart Agriculture (CSA) and therefore needs to be aligned to current and future climate issues affecting agriculture. With the country's low adaptive capacity, there is urgent need to address agriculture education so as to develop sustainable solutions affecting the agriculture value chain, food and nutrition security, and economic growth and development.

The objectives of the CTCN Technical Assistance are to develop a Climate Smart Agriculture manual for agriculture education (extension) in Zimbabwe and to provide training of trainers after the launch of the manual. This technical assistance will involve both local and international experts in developing the Climate Smart Agriculture manual within 12 months. The process will entail three workshops and field visits to agricultural communities and Climate Smart Agriculture projects so as to provide local contacts to strengthen the relevance and integration of traditional and modern knowledge in implementing Climate Smart Agriculture approaches. The main country partners are Ministry of Agriculture, Mechanization and Irrigation Development (MAMID), Ministry of Environment, Water and Climate (MEWC), and Green Impact Trust (GIT).

1. Overview of the CTCN technical assistance

1.1 Technology aspects

Hitherto the agriculture community in Zimbabwe has been using agricultural technologies that are traditional and are based on research that is more than forty years old for example the five agro-ecological zones that do not reflect the current situation on the ground since climate has changed. In line with the CTCN Request, Climate Smart Agriculture (CSA) Manual aims to propagate evidence-based tailor-made/relevant CSA practices that enhance production and address climate change without burdening the communities. Thus technologies such as the following will be promoted in the sector:

Rainwater harvesting, efficient supplementary irrigation, conservation agriculture (reduced tillage, mulching and crop rotations)intercropping, integrated crop-livestock management, agroforestry, improved grazing, improved water and catchment management as well as innovative practices such as better weather forecasting, more resilient food crops and risk insurance.

These practices also have the following co-benefits:

- Increased agricultural production and ensuring that the products such as tobacco fetch more money on the international market after they have been developed in a climate smart method
- Integrated planning of land, agriculture, forests, fisheries and water at local, watershed and national scales, to ensure that synergies are properly aligned;
- Promotion of activities that enhance carbon storage, combine animal husbandry and agro-forestry with food production, and are aimed towards improving soil fertility;
- Reduction of a variety of emissions from agriculture such as nitrous oxide from fertilizer application, livestock emissions, and methane from rice production;
- Exploring carbon finance as a tool to promote sustainable agricultural practices that have other direct benefits for smallholder farmers and the environment.

1.2 Objectives (outcomes)

The objectives of this CTCN technical assistance are to:

1. Develop a comprehensive climate smart agriculture manual for agriculture (university and professional extension) education in Zimbabwe, building on review of current agriculture education curriculum
2. Conduct CSA Training of Trainers workshop for agricultural college lecturers and extension officers and selected stakeholders in the agricultural sector in Zimbabwe
3. Develop and implement a monitoring and evaluation framework for CSA education in Zimbabwe
4. Highlight best practices on climate smart agriculture with high potential for further financing and uptake

***Medium-term impacts*:**

The outcomes of this response plan will follow a structure in terms of impacts based on three pillars i.e. productivity: collecting information on incomes from commercial farmers and wider rural populations to understand the contribution to food security and livelihood goals; climate change resilience: this involves calculating the "climate smartness factor" as a result of these CSA interventions and finally climate change mitigation: measuring changes in greenhouse gas emissions per unit area or per product for different activities at farm level. Examples for estimating greenhouse gas emissions are the IPCC software and the Cool Farm Tool. The Training of Trainers which is based on the Climate Smart Agriculture Manual developed during the CTCN technical assistance will enable the participation of extension workers from all the provinces, agriculture entrepreneurs and smallholder farmers to increase productivity and incomes build

resilience to climate change and reduce or remove greenhouse gases where possible. Climate-Smart Agriculture practices have significant benefits to sustainable agriculture and help reduce heat and water stress on crops and livestock. Finally, the CSA will bring in consistency between sustainable agriculture, food security and climate change policies in Zimbabwe. It will also assist through:

1. Developing students from agricultural colleges and higher and tertiary institutions to provide climate smart agriculture extension services
2. Increase climate smart agriculture adoption in smallholder communities, rural villages and agricultural enterprises through training, monitoring and evaluation
3. Reduce greenhouse gas emissions in on-farm activities through climate smart agriculture training, water and energy management,
4. Increase crop and livestock productivity whilst reducing the cost of agricultural production
5. Synthesis of information collected to improve on farm agricultural production
6. Build up a database on climate smart agriculture coping mechanisms for use as models of best practice
7. Improved transfer of knowledge by current extension workers in a selected pilot district and increased agriculture productivity in smallholder farming communities, rural villages and agriculture enterprises.

1.3 Results (outputs expected from CTCN assistance)

The main outputs planned under the CTCN technical assistance (CSA Manual) are the following:

- Review of the existing literature and field visits for selected pilot colleges.
- Stakeholder workshop to formulate thematic topics for the CSA Manual.
- A comprehensive Climate Smart Agriculture manual for Agriculture education in Zimbabwe for the Department of Agricultural Education and Farmer Training in the Ministry of Agriculture, Mechanization and Irrigation Development
- Launch of the Climate Smart Agriculture Manual and the integration of Climate Smart Agriculture into the agriculture education curriculum.
- Training of Trainers together with the Ministry of Agriculture, Mechanization and Irrigation Development (MAMID) through their extension officers.
- Monitoring and evaluation of the use of the Manual in the pilot colleges.
- Report with recommendations on future funding opportunities in CSA in Zimbabwe

1.4 Expected use of outputs

The produced CSA manual will be adopted as a resource book for in the Agricultural (extension) education sector in response to recommendations from the 2015 curriculum review exercise that identified the need to have in place a climate smart agriculture specific resource book. Furthermore, the technical assistance will promote the establishment of CSA demonstration centers at four selected pilot agricultural colleges. The technical assistance is expected to influence the lobbying for a climate smart agriculture strategy for Zimbabwe which is integrated into agricultural policies for enhanced national resilience to climate change. The Manual will emphasize sustainable increase of food production and incomes, adapting and building resilience to climate change and reducing and removing greenhouse gas emissions where possible. The CSA Manual will also be used in the training of trainers on the new CSA technologies. The knowledge thus gained will be expected to be shared widely across the whole agricultural communities through the extension system and promote a shift from the conventional agricultural systems that are not environmentally friendly and replace them with the CSA technologies. The development and use of the Manual is expected to positively transform agriculture by enhancing sustainable food production in Zimbabwe in the face of the changing and varying climate; provide the environment for enhancing climate resilience as well as reducing the carbon footprint from the agricultural community. The CSA plan for monitoring and evaluation (ME) is anchored on developing tools and strategies to track progress of implementation, evaluate impact as well as facilitating iterative learning to improve CSA planning and implementation. The primary audience for the

ME component are project designers and managers. A report on recommendations for future funding opportunities will also be produced (funds permitting) to enable the Zimbabwe agriculture community to further the learning from the manual and training of trainers to implementation of CSA practices.

2. Description of the Assistance

2.1 Activities

Activity 1 – Literature review of the existing literature

In order to come up with a CSA Manual, the CTCN assistance facilitates a thorough literature review of the existing documents that relate to agriculture practices as well as a field trip to four pilot colleges to get an in-depth understanding of the institutional dynamics i.e. the role of the Ministry of Agriculture; agricultural research institutions; agriculture extension offices; universities farmers unions etc. The proposed colleges include Chibhero; Mlezu; Mazowe and Esigodini.

Activity 1 – Deliverables

Deliverables	Delivery date
Collection of existing agriculture curriculum in selected colleges and universities	*Week 3*
Report on field mission in four pilot colleges of agriculture on knowledge of the geographical location and educational practices	*Week 6*
List of the existing literature in CSA and agriculture practices	*Week 6*
Monitoring and Reporting short summary about lessons learned in activity 1 (cf section 3.4)	*Week 6*

Activity 2 – National Stakeholders Consultation on development of the manual

With the assistance of the national expert who coordinates the whole process, the first workshop to formulate thematic topics for the Manual is held. After the laying down of the road map of the manual both national and external experts are selected on the basis of matching the requirements of the chapters with their respective competences to develop the CSA manual. The Manual is then developed and compiled by the experts. It is recommended practice for the manual to be independently reviewed before final draft.

Activity 2.1 National stakeholders' workshop

There is need for a launch of this process which could be done by the Minsters of Environment, Water and Climate as well as the Ministry of Agriculture counterpart. This one day event will gather the relevant ministries representatives (up to 20 participants). This will assist in getting stakeholder buy-in, media publicity and possible buy-in by the users. It aligns the TA with other initiatives in these ministries, partner initiatives as well as national priorities. It will also ensure reporting by the media, critical for adoption by the end-user of the manual. This could be through a joint press-statement or some small breakfast meeting to set the ball rolling and to publicize the support and activity

The launch will be followed by a technical workshop which will be attended by technical stakeholders. This first workshop will discuss the rationale of a CSA manual as well as formulating thematic topics/chapters for the Manual. The workshop will be attended by a wide range of stakeholders from the agricultural community i.e. high level MAMID officials, commercial farmers, small holder farmers as well as rural subsistence farmers. Workshop logistics should cater for 50 participants (max), venue, etc for three days. Potential thematic chapters may include the following: crop production, livestock production, aquaculture and fisheries respectively; ecosystem management; water and catchment management; soil and nutrient management;; renewable energy and energy management; agroforestry; CSA extension and knowledge

management and Post-harvest processing and management, CSA value chain. It is on the basis of the results of this workshop that experts will be recruited.

Deliverables	Delivery date
Workshop report and list of potential thematic chapters outlined in Activity 2.1. Awareness raising among the agricultural community on the CSA concept.	*Week 9*

Activity 2.2 Selection of experts for Manual development

Experts in CSA (national and external) to develop the CSA Manual are selected on the basis of the respective thematic chapters agreed to at the first workshop. This activity also covers the selection of the independent reviewer. The organization in charge of the independent review shall be an international organization expert in CSA.

Deliverables	Delivery date
List of experts selected on the basis of the thematic chapters agreed to in the first workshop	*Week 15*

Activity 2.3 Drafting the Manual

National and external experts in CSA develop and compile the Manual. The Manual will consist of a range of 10 to 15 chapters of approximately 100 pages. The chapters will endeavor to describe the CSA rationale and practices, the thematic chapters selected in activity 2.1 as well as results and costs of CSA practices based on comparative costs in other projects/programmes in other countries when possible.

Deliverables	Delivery date
First draft of the Manual	*Week 28*

Activity 2.4 Final review of the CSA Manual

The final draft is of the Manual is reviewed independently before it is presented to the stakeholders at the second workshop.

Deliverables	Delivery date
Final draft of the CSA Manual	*Week 35*
Monitoring and Reporting short summary about lessons learned in activity 2 (cf section 3.4)	*Week 35*

Activity 3Launch of the CSA Manual and Training of Trainers

The second one-day workshop for stakeholders validation of the draft manual. The draft will have been sent to them beforehand. Launch of the Climate Smart Agriculture Manual and the integration of Climate Smart Agriculture into the agriculture education curriculum is done after the stakeholders' comments from the validation workshop are incorporated. The subsequent Training of Trainers led by the sector experts will be implemented together with the MAMID, MEWC and NDEs once the Manual is accepted by the Government of Zimbabwe.

Activity 3.1 National Stakeholders Workshop to launch the CSA Manual

The launch of the CSA Manual is predicated on the involvement of the entire spectrum of the agricultural community in Zimbabwe. At this workshop the MAMID and the MEWC will explain to the rest of the stakeholders the rationale of adopting the Manual. This will include the respective benefits for a whole range of stakeholders i.e. commercial farmers; smallholders farmers; NGO'S; academia; research institutions as well as rural subsistence farmers. The outcome of the workshop is that the Government of Zimbabwe is firmly behind the Manual with the objective of increasing productivity, enhancing climate resilience and the reduction in greenhouse gas emissions from the agricultural community. Henceforth the Government will be working on the agriculture policy that supports the CSA manual

Deliverables	Delivery date
Report on the Launch of the Manual supported by the Ministry of Agriculture. Ministry of Environment, Water and Climate +NDE	Week 37

Activity 3.2 Training of Trainers

Conduct a joint training workshop (Training of trainers on Climate Smart Agriculture) with the Ministry of Agriculture based on the manual aimed at extension officers who in turn will impartCSA knowledge and practices to farmers at large. This training will have a duration of two days. The participants will consists of relevant lecturers from the selected agriculture colleges, 1 to 2 extension officers from each of the farming districts, 20 agricultural college lecturers, and other relevant stakeholders adding to a number of approximately 40 participants. This activity will endeavor to strengthen networking within the agricultural community. This exercise will pay particular attention to mobilizing a maximum number of female participants with an objective of gender balanced participation. Switching to a climate-smart smallholder agriculture approach may help to increase the benefits to women. It is essential to place an increased emphasis on interventions that are likely to be more beneficial to women.

Deliverable

Deliverables	Delivery date
Short summary of the Training of Trainers	Week 39
Monitoring and Reporting short summary about lessons learned in activity 3 (cf section 3.4)	Week 40

Activity 4 Monitoring and Reporting of the progress of the Response Plan and Monitoring and Evaluation of the use of the Manual in the pilot colleges.

In addition to the Monitoring and Reporting described in section 3.4, the Lead implementer, MAMID and NDE will also monitor the use of the manual in colleges from the end of the activity 2.3 to week 50 (more or less 3months of monitoring). This monitoring will take the shape of a survey in the four proposed colleges which will enquire on the relevance and use of the manual and on tracking CSA manual's interventions carried out in the field. This survey will be developed by the Lead Implementer, the results of which will be presented in a report (10-15 pages).

Deliverables	Delivery date
Report on the use of the CSA manual based on survey study	Week 50

2.2 Synergies and Baseline Setting

There are various initiatives that the Zimbabwe government launched to address the negative impacts of climate change in vulnerable communities such as the 'Operation Maguta' implemented in 2005. This initiative, focused on the provision of agriculture inputs such as fertilizers, seed, diesel, and tillage services to the communal farmers. In 2007, the government launched the Agricultural Sector Productivity Enhancement Facility (ASPEF), focusing on supporting a range of agricultural sub-sectors such as livestock and the winter wheat program, and production of various crops.

In November 2015, Government distributed maize seed to affected communities, in most of the country's administrative wards, complimented by the Presidential Input scheme, which targeted over 300 000 households accessing seed and fertilizer.

Government is also developing bilateral agreements with Brazil, Belarus and other countries to boost agriculture mechanization and irrigation as actions towards improving food production in the country.

The Ministry of Agriculture, Mechanization and Irrigation Development (MAMID), Department of Agriculture Education and Farmer Training held a Curriculum Review Workshop from 25th and 26th July 2015 with the objective of picking up gaps in the existing curriculum. Green Impact made a presentation on the challenges of the agriculture curriculum mainly citing the lack of mainstreaming of climate change and climate-smart agriculture. Climate-Smart Agriculture was subsequently identified as one of the missing links and ultimately leading in advocating for mainstreaming climate-smart agriculture in agriculture policies, especially on education. In this regard, the CTCN technical assistance with the development of the CSA will come in handy since awareness already exists.

Zimbabwe submitted its Intended Nationally Determined Contribution (INDC) where government committed to a 33% per capita greenhouse gas emissions reduction by 2030. The INDC focuses on energy sector for its climate change mitigation and it highlights the importance of Agriculture on its adaptation component through such issues as irrigation, promotion of resilient cropping and livestock, agroforestry-based adaptation and climate smart agriculture with mitigation co-benefits. The Technical assistance will therefore work towards the implementation of the INDCs.

The country has also launched the National Climate Change Response Strategy and is currently finalizing the development of the National Climate Policy which all recognize the need to have CSA implemented to increase climate resilience and mitigation.

In the Africa Union's Second Ordinary Assembly held in July of 2003 in Maputo, Mozambique, African heads of state ratified an initiative called the Comprehensive Africa Agriculture Development Program (CAADP). The explicit goal of CAADP is to "eliminate hunger and reduce poverty through agriculture". In pursuit of this aim, African governments commit to two "targets." In view these agreed targets climate smart agriculture is expected to play a pivotal role towards their achievement.

The Zimbabwe's Agriculture Investment Plan (2013-2018),and initial findings from the National Adaptation Plan (NAP) consultations continue to encourage the revival of agriculture through climate smart technologies, investments and other financing mechanisms. The Government of Zimbabwe cognizant of the possible opportunities from CSA held a workshop to mainstream CSA in the whole ZAIP Programme. Efforts by UNFCCC CTCN Response Plan will address issues raised in these documents which include, but not limited to capacity building in climate change mitigation and adaptation, skills, knowledge, equipment and other technology transfer, financing and insurance towards smallholder farmers, commercial agriculture, and rural communities.

2.3 Timeline

ACTIVITY	1	2	3	4	5	6	7	8	9	10	11	12
1.Review of the existing literature and field visits												
Collection of existing agriculture curriculum in selected colleges and universities												
Report on field mission in four pilot colleges of agriculture on knowledge of the geographical location and educational practices												
List of the existing literature in CSA and agriculture practices												
Monitoring and Reporting short summary about lessons learned in activity 1 (cf section 3.4)												
2: National Stakeholders Consultation on development of the manual												
2.1 Launch and Workshop report and list of potential thematic chapters outlined in Activity												
2.2 List of experts selected on the basis of the thematic chapters agreed to in the first workshop												
2.3 First draft of the Manual - Development of the Climate -Smart Agriculture Manual by experts												
2.4 Edited/Reviewed draft of the Climate Smart Agriculture												
2.4 Monitoring and Reporting short summary about lessons learned in activity 2 (cf section 3.4)												
3.Launch of the CSA Manual and Training of Trainers												
3.1Report on the Launch of the Manual supported by the Ministry of Agriculture												
3.2 Short summary of the Training of Trainers												
3.3 Monitoring and Reporting short summary about lessons learned in activity 2 (cf section 3.4)												
4.Monitoring and Reporting of the progress of the Response Plan and Monitoring and evaluation of the use of the Manual in the pilot colleges.												
Report on the use of the CSA manual based on survey study												
Monthly calls on technical assistance progress/status												

2.4 Expertise required

Activity 1	Review of the existing literature and field visits to selected colleges and universities
Expert 1	*Experienced agriculture extensionist*
Expert 2	*Expert in CSA with field experience in developing countries, in particular in Africa and with preference in Zimbabwe*
Event 1	*Review of the existing literature and field visits to selected colleges and universities*
Materials	*Hiring of 4x4 vehicle for two days the field visit.*
Activity 2	National Stakeholders Consultation on development of the manual
Expert 1	*Expert in CSA and project management*
Expert2	*Expert in Soil and water management related to CSA*
Expert3	*Expert in Arable farming related to CSA*
Expert4	*Expert in Agroforestry related to CSA*

Expert5	*Expert in Livestock related to CSA*
Expert6	*Expert in Renewable energy and Energy Efficiency related to CSA*
Expert7	*Independent Reviewer/Editor of the Manual related to CSA*
Expert 8	*Expert in Gender and HIV specialist related to CSA. Gender and social differences are dynamic within communities; a greater understanding of thesedifferences is critical for climate-smart smallholderagriculture programming*
Expert 9	*Expert in landscape management related to CSA*
Expert 10	*Expert in ecosystem management related to CSA*
Expert 11	*Expert in aquaculture*
Expert 12	*Expert in CSA value chain*
Event 1	*Consultation workshop on the manual themes*
Activity 3	Launch and adoption of the Manual by the Ministries of Environment, Water and Climate as well as the Ministry of Agriculture(one day) and Training of Trainers
Expert 1	*Expert in CSA with field experience in developing countries, in particular in Africa and with preference in Zimbabwe*
Expert2	*Expert in CSA covering 3 to 4 of the themes identified in the manual*
Expert 3	*Expert in CSA covering 3 to 4 of the themes identified in the manual*
Event 1	*Launch of the manual with national stakeholders*
Event 2	*Training of Trainers including catering, transport and accommodation for selected extension workers, students and other stakeholders*
Activity 4	Monitoring and Evaluation
Expert1	*Expert in CSA with field experience in developing countries, in particular in Africa and with preference in Zimbabwe*

2.5 Main partners

Stakeholder	**Role to support the implementation of the CTCN assistance**
Ministry of Agriculture, Mechanization and IrrigationDevelopment	core- custodian of the CSA manual Have ready information around the existing curriculum and existing gaps Expertise provision and review and validation of the handbook Ensure CSA is mainstreamed in the agricultural education sector beyond the project life Co-Monitoring and evaluation of the impact of the CTCN intervention. Review the handbook and expert guidance
Ministry of Environment, Water and Climate	Carries out allied activities on climate issues such as mitigation and adaptation- these are also CSA issues. As NDE, the Ministry will support the CTCN implementer in carrying out of the activities such as the organization of the workshop, the identification of the relevant national stakeholders and more specifically in

2.7 Gender considerations

This important aspect will need to be considered too, when dealing with the potential gender-implications of climate-smart agriculture practices. Similarly, in Zimbabwe there is a general acceptance that most women in agriculture are marginalized to focusing on crops and livestock which are not market driven or profitable. This Climate Smart Agriculture Manual and the integration thereof into agriculture education, aims to promote the role of women who carry the brunt of most agriculture activities at household level. To strengthen women's role in agriculture and develop their CSA skills, CTCN technical assistance will cover gender considerations in Activity 2.3, 2.4 and 3.2. In activity 2, a whole chapter of the CSA manual will be dedicated to gender. In activity 3.2, the CTCN technical assistance will endeavor mobilizing the maximum of female participants to the Training of Trainers.

2.8 Risk identification and risk mitigation

Risk	Consequence	Probability	Mitigation measure
Inadequate knowledge transmission to farmers	Slows down the pace of adoption of CSA technologies	Low	Wider stakeholder consultations Effective and Comprehensive ToTs
Sustainability	Beneficial project results will not be sustained in the long-term	Low	Provide guidance for future funding to widely implement proven programs and support poverty alleviation and food security goals in a changing climate.
Sluggish stakeholder buy-in	Slows down the pace of adoption of CSA technologies	Medium	Involvement of national stakeholders in the content of the CSA manual and the consultation/approval of final draft of manual
Lack of tenure security and limited property rights	Reluctance of farmers to invest in CSA technologies	Medium	Provide guidance for future funding and micro finance initiative and examples from other countries. Also reflection on CSA practice adapted to developing countries.
High upfront financing	Slow uptake of the CSA technologies in the country	Medium	Guidance for future funding included in the response plan activities.
No validation of the final draft of manual	Put a hold on the implementation of the response plan	Medium	Ensure full stakeholder engagement and participation from the onset to the end of the project. The NDE and GIT will support the implementer in reaching out and receiving the comments in time

3. Long-term impacts of the assistance

3.1 Expected climate change-related benefits

	CTCN climate technology impact	Anticipated contribution from CTCNassistance
1	Energy Efficiency in agricultural sector /or transfer in the requesting countries	Irrigation tends to enhance resilience and may increase energy efficiency through its impacts on productivity
2	Sustainable energy solutions adopted to reduce the carbon footprint and increase productivity, reduce energy costs in the long term	Practices such as reduced tillage, precision agriculture, replacement of synthetic fertilizerswith agricultural residues or manure, elimination of pesticides through integrated pest management orenhanced distribution logistics that reduce fossil fuel combustion will generally lead to reduced GHG Emissions
3	Water efficiency through climate smart technology transfer	Climate change adaptation in water includes a range of response options to be applied at applied at different scales: on fields and farms; in irrigation schemes; in watersheds or aquifers; in river basins and at the national level.
4	Water harvesting techniques in order to curb water stress in crop, aquaculture and livestock production	Conserves limited rainfall for longer periods which allows farmers to grow crops in semi-arid areas with low and erratic rainfall
5	On-farm waste management systems to establish crop and livestock integrated systems, increasing resilience and reducing the carbon footprint	–
6	New or strengthened policies/ laws developed, approved and enacted as a result of the response	CSA was cited as a gap during the MAMID symposium and therefore there is a need to its adoption as a policy
7	New policies/laws where climate change was mainstreamed as a result of the response	–
8	Country integrating climate change mitigation and/or adaptation issues into its planning and policies as a result of the response	Climate Response Strategy for Zimbabwe takes into account mitigation and adaptation issues for the agriculture sector i.e. included in the CSA manual.
9	New or strengthened Public-Private Partnerships (PPP) created directly as a result of the response	The BioCarbon Fund, a public-private initiative administered by the World Bank, has agreed to purchase carbon credits generated by CSA practices that will be based on the learning of the manual.
10	New or strengthened twinning arrangement created as a result of the response	–
11	Capacities to access and attract public and private finance increase to enable financing	The BioCarbon Fund, a public-private initiative administered by the World Bank, has agreed to purchase carbon credits generated by

	the implementation of activity 4. Monitoring and evaluation of the impact of the CTCN intervention. Carries out the oversight role. Ensuring alignment of the TA with national priorities as well as the identification of the national experts in CSA for manual drafting, with close coordination with the Lead Implementer, Applicant and CTCN. Review the handbook and expert guidance It also has the Meteorological Services Department which could provide other technical expertise as well.
Green Impact Trust	Green Impact Trust as the request proponent, recipient organization of the UNFCCCCTCN Technical Assistance and core-custodian of the CSA manual and national coordinator, is responsible for providing logistical support to the CTCN implementer; and shall be engaging national, regional and international stakeholders and assisting in identifying national experts in CSA for manual drafting, with close coordination with the Lead Implementer, NDE and CTCN.
Ministry of Higher and Tertiary Education, Science and Technology Development	This Ministry will play a role since Higher and Tertiary institutions come fall under its umbrella.

2.6 Indicative budget

Activities	Estimated Budget (USD)
1. Review of the existing literature and visits to 4 pilot colleges	10,000
2. National Stakeholders Consultation on development of the manual: Hold official launch and first workshop to formulate thematic topics for the Manual (two-day workshop for 50 participants), selection of experts to develop the CSA Manual and drafting the manual.	45,000
Launch of the CSA Manual (one day workshop) and Training of Trainers (two to three day training).	
3. Launch of the CSA Manual and Training of Trainers	17,000
4. Monitoring and Reporting of the progress of the Response Plan and Monitoring and evaluation of the use of the Manual in the pilot colleges.	6,000
Total	78, 000

Implementation of this Response Plan will be led by the Climate Technology Centre (including selection, contracting, supervision and monitoring of implementation partners) in close coordination with the corresponding National Designated Entity and relevant national actors. Implementation will be led by an International Consortium or Network Partner of CTCN.

	of technology deployment	thorough this request.
12	Post-response intervention funding attributable to the response.	Post- response funding may include: New opportunities under Global CAS Alliance include NEPAD, FAO WB IFAD and the WFP.
13	Framework and analysis of local production developed to enable deployment of national production of climate technologies	–

3.2 Co-benefits

	Sustainable Development Goal	**Contribution from CTCN assistance**
1	Increased resilience to climate change	CSA technologies will be expected to enhance both adaptation and mitigation
2	Reduced carbon footprint	Promoting activities that increase carbon storage, combine animal husbandry and trees with food production, and are geared towards improving soil fertility
3	Increased sustainable intensification	Methodologies will be contained in the CSA Manuel.
4	Reduced rate of deforestation	Increased use of renewable energy and sustainable use of resources in agricultural practices
5	Improve socio-economic development in vulnerable, mainly, rural communities.	Integrated planning of land, agriculture, forests, fisheries and water at local, watershed and regional scales, to ensure synergies are properly captured.
6	Ensure availability and sustainable management of water and sanitation for all	–
7	Ensure access to affordable, reliable, sustainable, and modern energy for all	–
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	–
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	–
10	Reduce inequality within and among countries	Gender considerations are part of several activities, including the objective of having a gender-balanced training of trainers
11	Make cities and human settlements inclusive, safe, resilient and sustainable	–
12	Ensure sustainable consumption and production patterns	Exploring carbon finance as a "lever" to promote sustainable agricultural practices that have many other direct benefits for smallholder farmers and the environment.

13	Take urgent action to combat climate change and its impacts	CSA will contribute towards mitigation and adaptation in reducing emissions i.e. carbon sequestration and soil
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	-
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	-
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	-
17	Strengthen the means of implementation and revitalize the global partnership for sustainable development	

3.3. Post-assistance plans and actions

- Develop a Climate Smart Agriculture Policy and Strategy
- Promoting Green Impact's flagship programme, Student Footprints for Climate Smart Agriculture(SFCSA)
- Promoting Green Impact Student Exchange programmes within Africa and in South-South cooperation so as to share experiences and integrate solutions to develop agriculture
- Increasing stakeholder awareness of climate smart agriculture across the value chain, especially in rural communities
- Develop Climate Smart Agriculture Demonstration Centers in all 8 government-run agricultural colleges government-run agricultural colleges
- Develop Climate Smart Agriculture Demonstration Centers in traditional Chiefs' homesteads
- Developing a Climate Smart Village as a model for rural development
- Develop a CSA mainstreaming framework or strategy that informs policies in Zimbabwe.

3.4 Monitoring and Reportingof technical assistance results and impacts

Expected activities and milestones under this assistance are explicitly described in sections 1.3, 2.1, 3 and the performance indicators table below (see also log frame in annex). Activities progress and deliverables will be monitored closely by the Lead Implementer of this Response Plan with the collaboration of the NDE in Zimbabwe, the request proponent and CTCN. The Lead Implementer is responsible for verifying project progress against timeline and associated milestones and communicates these results to the NDE and CTCN. At the end of each activity, the Lead Implementer will provide a short summary of lessons learned of the activity reflecting on the progress, successes and challenges encountered during the activity. Every month a teleconference with country and international partners is held to communicate the state of advancement of the project, challenges, possible needs for adjustments etc. The Lead Implementer is responsible for planning these activities.

Performance indicators of CTCN Assistance				
Response output *(linking to sec 1.2)*	**How output will be used to ensure creation of result**	**Expected result**	**Expected outcome of result** *(linking to sec 1.1)*	**Anticipated impact that outcome will produce** *(linking to section 3)*
Review of existing literature and field visits	Knowledge garnered in reviewing literature and field visits will be used to develop the Climate Smart Agriculture manual.	Enhanced existing knowledge which will be the starting point for developing the CSA manual	CSA Manual	CSA practices promoted and implemented in the country
Launch of the Process	The high level guidance in preparation for and at the launch, media coverage and feedback afterwards will help strengthen the TA and address any possible threats	Stakeholder buy-in and media coverage	Increase anticipation of the CSA manual	Increase uptake and usage of the CSA manual
Stakeholder workshop to lay the roadmap for the development of the CSAManual	The first workshop resultswill be usedto identify the chaptersof the CSA Manual. Proceeding workshops will be used to edit CSA draft manuals	Thematic chapters of the Manual	First draft of the Manual	Enhance sustainable food productionand contribute combatting climate change

Launch of the Climate Smart Agriculture Manual and the integration of Climate Smart Agriculture into education curriculum	Output will be used to get buy-in of the Government, business and farming community	Adoption of CSA practices	Enhanced sustainable food production and reduction in GHG emissions	Adoption of CSA practices
Monitoring and evaluation	Ensure quality of CSA Manual	Quality CSA Manual	Quality CSA Manual	Sustainable food production that includes climate change elements i.e. adaptation and mitigation

4. Signatures

Signatures of the requesting country

NDE	**Request Proponent**
Name: ELISHA N. MOYO	Name: Desire Nemashakwe
Title: PRINCIPAL RESEARCHER	Title: Director
Date: 07/06/2016	Date: 07/06/2016
Signature:	Signature:

Signatures of the CTCN

CTCN Director	**Climate Technology Manager**
Name: JUKKA UOSUKAINEN	Name: JASON SPENCER
Title: Director	Title: MANAGER
Date: 06. June 2016	Date: 06/06/2016
Signature:	Signature:

Annex 1:Response Logframe

Activity *(link to sec 2)*	**Description of sub-activities conducted by the CTCN**	**Output/ Deliverable** *(link to sec 1.3 and 2.1)*	**Expected Outcome** *(link to sec 1.2)*	**Main national partners involved**	**Objectively Verifiable Indicator** *(see Annex 2 for guidance)*	**Means of Verification** (data source, method of collection, responsibility and periodicity)
Activity 1: Review of the existing literature and field visits	*Activity 1.1 Desk top review of the existing documents and field visits for selecting pilot colleges for CSA Manual trials*	*Developing the CSA Manual*	*Use climate smart agriculture manual in the agriculturalpractices*	*Request Proponent*	*Number of documents reviewed and number field visits*	*Number of reviewed documents and visits*
Activity 2: National Stakeholders Consultation on development of the manual	*Activity 2.1 Launch and Workshop report formulating and outline the thematic contents of the Manual.*	*Road map of CSA manual*	*Draft CSA Manual*	*NDE*	*CSA Manual*	*Adoption of CSA Manual*
	Activity 2.2 Selection of experts for manual development	*Development of thematic topics for the CSA Manual*	*Draft Manual*	*NDE*	*Thematic topics in the manual*	*Number of thematic topics in the manual*
	Activity 2.3 Development of the Climate –Smart Agriculture Curriculum by consultants	*Compiling the CSA Manual*	*Draft CSA Manual*	*NDE*	*CSA Manual*	*Adoption of policy based on CSA Manual*
	Activity 2.4 Edited/Reviewed draft of the Climate Smart Agriculture	*Production of the first draft of the Climate Smart Agriculture by the consultants*	*Sustainable food production and reduction of GHG gases and adaptation options including the emphasizing the participation of women.*	*MAMID*	*Final Draft of the Manual*	*Manual with CSA practices upon which new policy will be based*
Activity 3:	*Activity 3.1 National Workshop for launching*	*Lobbying for Climate*	*CSA Policy*	*MAMID*	*Policy Document*	*Consistency between agriculture,*

Launch of the Manual and Training of Trainers	*and lobby for Climate Smart Agriculture policy*	*Smart Agriculture policy and training of trainers*				*food security and climate change policies*
	Activity 3.2 Training of trainers on Climate Smart Agriculture	*Partaking in the training by trainers including women*	*Enhanced CSA knowledge*	*MAMID*	*Number of trainers trained* *Number of female participants*	*Level of appreciation of CSA practices*
Monitoring and Evaluation	*short summary of lessons learned of the activity reflecting on the progress, successes and challenges encountered during the activity*	*Summary report*	*Lessons learned and improvement of future activities*	*NDE*	*Summary reports*	*Monthly calls and summary reports*