**Project proposal and Terms of Reference**

**Developing approaches to support smallholder decision making and planning through the use of climate and weather information (Funded by Climate Change Agriculture and Food Security)**

1. **Background and justification**

* Farmers in Sub-Sahara Africa, operating in risky and unpredictable environments, have to make decisions with very limited information available to them
* Research on farmers’ perceptions of climate change and variability indicate that in many communities there are perceptions, particularly regarding amounts and timing of rainfall, that are i) not generally reflected in analysed climatic data and ii) contradictory. Consequently farmers may be making decisions and implementing both short term management practices and longer term strategies that are inappropriate
* Analysed historical data (from daily records made over several decades) is increasingly being made available in several countries (through work undertaken by UoR with partner institutions). At the same time a range of participatory approaches (including participatory farm management methods [Dorward et al 2003]) exist that could be adapted and used to communicate with farmers about analysed climate information in ways that enable farmers to make more informed (and therefore improved) short and longer term livelihood, farm and crop decisions. Key to this is understanding what information farmers want and need, being able to provide it in ways that are easy to understand and at the same time enable facilitate meaningful consideration of implications.
* Forecasts (long, medium and short) can provide further information of value to planning and decision making. Attempts to introduce these to farmers have had mixed success. With the improved understanding from the above there is scope to add some of these to the information that farmers receive in a more integrated and useful way.
* Preliminary fieldwork in Zimbabwe (June/July 2012) confirmed the need for and potential of research on this topic. Smallholders, working with extension staff successfully used a range of approaches in the initial steps 1-4 (steps summarised later in this document). Work is required to test the full approach at a range of locations with different characteristics (climate, agriculture, socioeconomic), draw lessons and facilitate wider implementation and scaling up. Capacity building amongst service providers, particularly extension services and NGOs that work directly with smallholders forms a necessary and important part of the project.

**Aims and outline**

Develop and test approaches that build on the above:

* To improve awareness and understanding amongst smallholders of climate variability at their location and of whether there are any trends in climate that are currently evident from the information
* To understand what climate related information farmers want and need for improved decision making (for different types of decisions)
* To communicate information effectively and in ways that enable learning, interaction and exploration by farmers, and that facilitate short and longer term planning and decision making, and
* Which can be scaled-up

The project will work in several countries (Tanzania and at least one other) and support national partners to obtain funding (e.g. CCAFS regional funding, McKnight) to conduct activities to achieve the above. In Tanzania work will be conducted at Dodoma over two years and supported for the CCAFS site at Lushoto which has different climate characteristics. Exploratory work in West Africa will start in late 2012 at a meeting with Farmer Organisations on use of climate data. The project will also seek to engage with partners and develop initiatives in other countries where possible*.* It will seek to learn and share learning, build principles, take ideas forward and share these between countries and regions.

For information / illustration, the approach we have started to try on a very small scale in Zimbabwe includes the following (see table for summary and timing).

1. Analysis of historical climate data (daily records) jointly by Met and Extension services for specific locations
2. Train extension staff to present findings to farmers (in groups) of the above mainly using visual representation of key components for each year analysed (e.g. rainfall totals, no.s of rainy days, onset of rains and planting opportunities, temperatures, dry spells, end season and season length)
3. Using the analysed data, extension staff and farmers discuss variability (and trends, where they exist) and the main long and short term implications both at livelihood and individual crop management levels
4. Using simple participatory approaches farmers calculate the probabilities of key ‘events’ they are interested in from the above, and which can be used to inform future management decisions. (Also identify any ‘events’ they would like information on that have not been provided)
5. Consider with farmers the more detailed implications of probabilities of key events for crop management options and for broader livelihood options. Use Resource Allocation Maps (for livelihood ‘level’ decisions) and crop calendars / participatory budgets (for crop management decisions) to explore what options farmers have and would consider for different types of season (e.g. El Nino / La Nina / ‘normal’)
6. Explore how probabilities of ‘events’ can be communicated to farmers (and the process scaled up to include large numbers of farmers) at key stages of the season and alongside the Seasonal Climate Forecast and forecasts of El Nino and / La Nina seasons
7. Follow up and explore the use famers make of above information and approaches, what value it is to them and if and how the process could be improved.

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| Well before the season starts | When SCF and El Nino / La Nina predictions are available | Just before season starts | During season |
| Find out what events farmers would like information on (working with groups) | Communicate these to farmer groups, (including for El Nino and La Nina the ‘strength’) | Farmers use short term forecasts (and refer to probabilities) | Update of SCF and by now is evident whether it is an El Nino / La Nina year etc |
| Communicate probabilities of events to farmers in participatory way (including discussion on implications and management options) | Consider implications with farmers (revisit what did in last box of previous column). In future years may be sufficient to text this information to the ‘contact’ farmer |  | Visit farmers in year 1 season to explore if using probabilities (and which events are useful/ need to be added) |
| Include looking at data for El Nino, La Nina years and discuss usefulness of this and of SCF | Opportunity for support services to consider any implications for farmer requirements eg varieties |  |  |
| Consider livelihood and crop options for El Nino, La Nina and ‘normal’ years | Possible to revise probabilities of events (eg normal year) |  |  |

**Terms of Reference**

CONTRACT DURATION: 1 October 2012 to 31 December 2014.

The project will implement steps 2-11 for Dodoma in Tanzania and will work with and support national partners in at least two countries to develop and implement initiatives in order to meet the four aims set out on page 1. This will include helping partners to obtain funding from CCAFS regional funds and other donors. The following activities will be implemented in the countries subject to the assumption that funding is obtained by national partners. The project is related to another CCAFS funded project which is managed by Dr Stern and includes developing capacity of Meteorological Services to provide analysed data for agriculture. Deliverables are listed at the foot of the page.

1. Review literature on smallholder farmer decision making and requirements for climate and weather information.
2. Liaise with country Met services on required analysed information (and including through separate CCAFS funded project managed by Roger Stern).
3. Develop links between key organisations in each country to facilitate longer term collaboration on provision of information to farmers using approaches developed and tested through this project.
4. Conduct training workshop (including field training and evaluation) for extension and NGO staff in participatory and other approaches which they will use with smallholder farmers over the following season.
5. Support trained staff in use of approaches as they work with smallholder farmers over the season.
6. Monitor effects of use of approaches through and following seasons including feedback from farmer participants.
7. Hold feedback workshop for trained staff.
8. Refine and improve approaches (including analysed information required).
9. Hold short updating training workshop for staff (incorporating improvements based on 6, 7 & 8).
10. Repeat activities 5 – 9 (for sites with sufficient time available before end of project).
11. Produce training materials (including in local languages).
12. Disseminate project findings and engage with key organisations and policy makers on findings and implications.

Deliverables:

1. Annual and financial report (including summary of activities and achievements) for 2012. Report on feedback and evaluation of training and support. Training materials and tools available on web. By 31 March 2013
2. Annual and financial report (including summary of activities and achievements) for 2013. Literature review. Draft guidelines and lessons learnt on supporting extension staff and farmers in use of communication, decision making and planning approaches (available on web). Updated training materials and tools available on web. By 31 March 2014
3. Annual and financial report (including summary of activities and achievements) for 2014. Final version of refined training materials and tools available on web. Journal paper. Guidelines and lessons learnt on supporting extension staff and farmers in use of communication, decision making and planning approaches (available on web). Report on dissemination achieved. By 31 January 2015

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