**Report on Trip to Zambia Under the Project
"Improved Modeling of Household Food Security Decision Making
and Investments Given Climate Change Uncertainty"** [1]
August 16-24, 2014

By Eric Crawford and Jennifer Olson [2]

Overview

The purpose of this trip was to report on final results of work in Zambia, and to discuss next steps. Based at our local collaborating institution, the Indaba Agricultural Policy Research Institute, we gave presentations on August 19 to an audience of government, university, donor, NGO, and private sector stakeholders and IAPRI staff, traveled to Chipata on August 20 and 21 to provide feedback to the local farmers' group that we had met with two years previously and to meet with district staff of the Ministry of Agriculture, and met with staff of the USAID/Zambia on August 22 to discuss next steps. We also held several meetings with IAPRI staff. We were in country from August 17 to 23.

These activities are described in more detail below. A detailed calendar of activities and list of persons met, with their contact information, is attached as an annex.

Presentations at IAPRI, August 19, 2014

On Tuesday, August 19, from 9:30 to 1:00, IAPRI hosted a seminar for us to present our latest results, chaired by Mr. Ballard Zulu, Director of Outreach of IAPRI. After an introduction by Mr. Chance Kabaghe, Executive Director of IAPRI, Olson and Crawford gave presentations of approximately 30 minutes, followed by an hour of discussion. The agenda and list of participants are attached as annexes.

Olson presented a summary of statistical analyses of precipitation and temperature trends in Zambia since the 1980s, future climate projections, and then results from the coupled climate-crop modeling. Those included findings on the impact of observed climate variability on maize yield under different fertilizer applications and cultivars, the benefit of fertilizer application by rainfall regime, how various crops are expected to be affected by climate change, and implications for policy. Crawford presented results from household modeling illustrating the impact of projected climate change on household decisions regarding crop choice and land use, the effects of those decisions on food security and vulnerability of different household groups, and some results of analyses of minimum tillage (part of conservation agriculture).

Major comments and points of discussion during the seminar included:
1. Regarding Jenny's presentation:
    a. Regarding the point that short-duration maize varieties should not be promoted for all areas of Zambia, given that long-duration maize varieties out-produce short-term varieties in many/most years, it was noted that short-duration varieties still have an insurance value, especially in areas where rainfall is especially variable and the probability of failure is high.
    b. Soil-holding capacity / soil texture as a critical factor, especially in drier areas. Also would be interesting to present results in terms of evapotranspiration or potential evapotranspiration (i.e., water stress).
    c. Other nutrients besides nitrogen are limiting, such as phosphorus and potassium, especially in the north. Could we simulate the effects of climate variability and change on maize yield considering those nutrients? The crop model doesn't simulate the other nutrients, so this would need to be done statistically.
    d. Mr. Msoni from FAO made a point regarding subdivision of Agro Ecological Regions (AERs) into AEZ's partly in terms of soil moisture balance. Zambia has 3 AERs (region I, region II, and region III) with rainfall as the distinguishing feature. These AERs are further subdivided into 4 AEZs(i.e., Zone I, IIa, IIb, III).
    e. The Farmer Input Support Programme (FISP) needs to be much more regionally specific that it currently is, especially regarding fertilizer recommendations and promoting crops other than maize. This is, however, a political issue.
    f. Crop insurance also would be helpful but again is difficult to design and implement. Would farmers be willing to pay premiums?
2. Regarding Eric's presentation:
    a. Harry Ngoma asked whether the models did, or could, allow for expansion of cultivation by the smallholder household type. Answer: it did not, but it could. Since the emergent farmer type left some land fallow, the farm size at which expansion of cultivation would stop would lie between 1.9 and 7.0 ha. However, using these models to estimate land expansion might occur is unlikely to be useful, given the difficulty of modeling the availability and costs of access to additional land.
    b. Harry Ngoma also noted that a perennial problem is the difficulty farmers have of planting on time. Did we analyze the early onset of the rains?
    c. Regarding the analysis of minimum tillage (MT), Hambulo Ngoma noted that the CFS data don't indicate how long people have adopted MT. Also, while adoption of MT is subsidized, the fact that so many people dis-adopt MT indicates that the design of the subsidy approach does not effectively ensure sustainable adoption.
    d. Collins Nkatiko noted that some of the labor requirements for the MT production in our model results do not seem reasonable. Land preparation and planting requirements should not vary in some cases.
    e. Regarding adoption of minimum tillage and conservation agriculture in general, what can be done to promote adoption when the benefits to the farmer accrue several years after the initial labor investment?
    f. Rhoda Mofya-Mukuka, IAPRI research associate, asked why did we use calorie maximization as the objective, given the importance of other dimensions of food

intake such as protein consumption? Yes; the effect of changes in cropping system on protein availability could be modeled and reported. It might also be possible to construct a nutritional or food availability index that combines both calories and protein.

g. Anna Toness asked why the percentage declines in calorie availability due to climate change were so small relative to the percentage declines in crop yield in the previous slide. (I later clarified that the Y-axis scale in slide 16 is decimal percentages. I.e., -0.4 = -40%.)

h. Relatedly, Jordan Chamberlin asked why the percentages of calorie loss regained by adaptation in the model were so small. (To investigate. These percentages depend on whether the denominator in the calculation is the baseline calorie amount or the reduction due to climate change. I would suggest the latter.)

i. Regarding the comparison of farmer perceptions of climate change and the patterns shown in the met station data, Jenny noted that recent analysis of daily rainfall shows fewer differences than we reported between farmers' perceptions and met station data with respect to the shortening of the rainy season and greater variability of rainfall within the season. She also noted that increasing temperatures create greater water stress on crops and drier conditions, even with no change in rainfall.

3. Regarding both presentations:

a. Ballard Zulu recommended that we prepare a policy brief that lays out the implications of our research for government policy and investment programs. This was echoed by other participants, emphasizing that implementing agencies want concrete guidance on how to address the impacts of climate change.

b. Ballard also asked whether we could address the question of whether the government's standard fertilizer recommendation (four 50-kg bags of basal and four bags of top dressing) are appropriate for all farmers. Should there be a different "minimum" recommendation for the poorest farmers? Could we work with ZARI on this question?

c. Relatedly, Antony Chapoto noted that a big message from our results is that water matters. The return to fertilizer is lower in low-rainfall areas. Should the government's input support program not reflect this by, for example, providing vouchers so that farmers in the drier southern zones can use them to access inputs related to livestock production?

d. On the issue of the importance of water, Eric Crawford expressed the view that public and private investment in water conservation would be important, given the anticipated increase in variability and intensity of rainfall. Jenny Olson mentioned that other countries are investing in small catchment dams and irrigation. Anna Toness suggested that agroforestry as well as MT would be useful in improving water retention, as well as smoothing the flow of benefits food and cash to households.

e. Anna Toness expressed an interest in the following topics or questions:[3]

i. The problem of deforestation and the extent to which this is caused by land-constrained farmers seeking new areas for cultivation.

---

[3] Responses to some of these questions are contained in the section reporting on our meeting with USAID/Zambia on August 22.

ii. Relatedly, could the model be used to assess the effect of land scarcity on migration, poaching, use of non-timber forest products, etc.?

iii. The importance of the seasonality of cash and food availability for the household. Could this be incorporated in the household models?

iv. Could the model include an "outgrower" household type to evaluate whether the cotton model of providing inputs and a ready output market could be applied to other crops?

v. How might the model being developed by Prof. Robby Richardson of MSU fit with ours?

f. Lastly, in his closing remarks, Chance Kabaghe emphasized the demand for concrete "what next" recommendations. He also underlined the importance of further joint work with ZARI to link our model results and their field trial results on fertilizer response across the country and other practices including adaptations to climate change.

Notes to team:
1. Re: maps/graphs of annual yield by fertilizer regime, using daily rainfall data, let's put some basic economics with this (like gross margins calculated by Brian earlier), to see what can be said about where the fert application is unprofitable.
2. Modify the "15.5%" on the Y-axis label of the fert vs annual rainfall graphs to include 15.5% of what.

Travel to Chipata, August 20-21, 2014

Olson, Crawford and Mulenga, an IAPRI research associate working on the climate change project, went to Chiparamba Block, Chipata District. They met a group of farmers (8 women and 5 men) with whom we met at the outset of the project, and the block's agricultural extension agent, David Likukela. The purpose of the visit was to provide feedback on the research results, and discuss the findings and implications for adaptation.

Olson told them about the results of the statistical analysis of temperature and rainfall historical and projected trends, including increasing rainfall variability and rising temperatures. Crawford mentioned diversifying away from maize to other crops or to livestock that would be less sensitive to rainfall variability.

Major points included the following:
1. Regarding rainfall trends, Jenny asked whether the uptick in rainfall observed in recent met station data had continued. Farmers said rains started going down after 2012, and "drastically" with fewer, more intense rainfall events.
2. Regarding the relative merits of hybrid versus local maize varieties:
   a. Pannar 53 is the only hybrid variety grown because it is provided in the FISP (Farm Input Subsidy Programme).
   b. Hybrid maize takes 3 months to mature versus 4 months for local. For this reason, hybrid is considered by some of the farmers to be more resistant to drought, although there was discussion about this. It also gives greater returns to fertilizer.

     c. Hybrid yields are higher. You get 14 rows of grain per cob on hybrid versus 7 rows for local. However, local maize grain weighs more than hybrid.[4]
     d. Local maize tastes better and stores better, it resists weevils without chemicals.

3. Regarding maize production practices, farmers said they grew hybrid and local in separate fields, but applied the same fertilizer dose on both.
4. Farmers also indicated that they were being encouraged by extension to plant groundnuts and sunflower at the same time as maize since the rainy season was getting shorter (unlike previously when farmers would plant groundnuts and beans a month and half after planting maize). (We asked the district agricultural coordinating officer about this. He said that this was not true; they recommend that planting of crops should be staggered.)
5. Regarding other improved varieties, there exist short-duration groundnut varieties, but none that they are aware of for cotton and tobacco. Lately, there has been a shortage of a particular cotton seed type (chureza), which is recommended in Zambia. As a result of this shortage, the government has withdrawn the subsidy for cotton under FISP.
6. Which crops are the most sensitive to impacts of climate change? Maize especially, then groundnuts.
7. Regarding conservation agriculture, farmers indicated that preparation of planting basins is indeed labor intensive, because the ground is hard in the dry season.
8. Regarding other methods of improving water retention, farmers mentioned contour ridges, planting trees, and planting of vetiver weed (grass) strips.
9. Regarding diversification away from maize, farmers indicated that:
     a. Maize is their staple food, which they are not likely to stop growing until conditions become desperate.
     b. The reliable market is for maize purchased through the FRA. They could diversify to other crops if markets for them existed.[5]
     c. One farmer said that the soils in their area were not good for cassava.
     d. Keeping chickens and goats is another diversification strategy.
10. When asked what the area will be like in 20 years, they described how hot and dry it will be, and that they will need to plant trees and do conservation agriculture. For now, however, they said that they prefer to grow maize until disaster strikes.
11. They asked about crop insurance in the U.S. They said that they receive food assistance during bad droughts but that they would prefer to receive money. They did not realize that American farmers have to pay premiums for crop insurance.

On the morning of August 21, we met with the District Agricultural Coordinating Officer, Alphonse Kahalawe and the Acting Senior Agricultural Officer, Chinyanta Kambole. Topics discussed included:
1. They expect an increase in maize production in the district in the 2013/2014 season,
2. To estimate district crop production, they carry out an in-house crop forecast survey in January/February (different from the Crop Forecast Survey conducted by the Central Statistical Office). Field officers make estimates based on bags of seed distributed and

---

[4] Not sure what the implication of this is. Perhaps the perceived drawback is that you need a larger quantity of hybrid maize to make up a 50-kg bag when you sell it, so you earn less per volume of maize.
[5] During our trip we observed other buying points for maize established by the Cargill project and a South African company. South African companies are also active in purchasing groundnuts.

area planted among other factors. We noted that the maize production statistics for Chipata seem to track rainfall trends closely.

3. Regarding conservation agriculture:
   a. They are widely promoting CA.
   b. Their recommendation is that farmers prepare the basins right after harvest, while there is still some moisture in the soil.[6]
   c. Traditional ridges don't go through the hard pan. Planting basins are supposed to go through the hard pan (below 15-20 cm), with the aid of the Chaka hoe (double the weight and narrower than the traditional hoe). However, the hard pan can be very hard to break through.

4. Regarding planting times, they do not recommend planting groundnuts and sunflower literally at the same time as maize. Rather, after planting maize (November), groundnuts can be planted in December and common beans even in January. Late planting of sunflower is a problem, however, since farmers often wait until February, which results in small seed heads.

5. They encourage local value-added processing of sunflower, since the oil and cake can be sold for more than the seeds.

6. Yes, there is currently a shortage of the recommended cotton variety, chureza. They listed the many seed companies selling maize seeds, and explained that in FISP the farmers in a block select the seed that they would like, and then that seed is the one distributed.

7. The Cargill project is giving their cotton farmers maize seed and inputs. They buy the maize from farmers for cash, whereas farmers selling to the FRA must wait a minimum of two weeks before receiving payment.

8. Regarding orange maize, farmers report liking the taste, especially in green form.

9. Big South African companies buy groundnuts in Chipata. They are desired because they are grown organically. The groundnuts get repackaged and sold as produce of South Africa!

Meeting at USAID/Zambia, August 22

We met with Dr. Anna Toness (Economic Growth Team Leader) and Mr. Brian Martalus, Feed the Future Division Chief.

Topics discussed included several of those raised by Anna during the August 19 seminar. Her interest was in knowing whether we could address any of them.

1. Intensification versus extensification, and the effect of the latter on forests and other natural resources. It would be good to know what household, agronomic productivity or climatic factors are causing deforestation, where is it occurring, and how to reduce it. One possibility would be to link the household model and/or survey data analysis to land use change analysis being done by John Boos (formerly from USAID/E3) and Jordan Chamberlin (IAPRI). Eric indicated that, for the reasons noted above, the household model alone would not be adequate to address this. Jenny said that we could do an analysis of changing productivity (NDVI) of the crop and forest land that could help to identify when and where deforestation happened. Anna mentioned the UN/FAO-funded

---

[6] Brian Mulenga noted farmers saying in interviews that they are very busy with other post-harvest activities and do not have time to prepare planting basins right after harvest. And they have social obligations to meet and other activities later in the dry season.

Integrated Land Use Assessment (ILUA) project, which is doing much finer-scale assessment of land use change patterns in Eastern Province during phase 2. USDA and FEWSNET are also working on mapping maize and legume production area using geospatial data. Ground-truthing in Eastern Province is currently underway. Crawford mentioned a somewhat similar multiple-year project being conducted in Senegal by Jiaguo Qi (Director of MSU's Center for Global Change and Earth Observation) and colleagues including Dan Clay.[7]

2. Anna was interested the possibility of water catchments and irrigation as possible adaptation technologies. Olson described her USAID-Tanzania project in southern Tanzania linking climate data to hydrological and crop models to identify the impact of climate change on maize and water availability for irrigated rice. Anna asked for the project brief for that project

3. Capacity building.
    a. Crawford described how the household model could continue to be updated and used if people in IAPRI and the Ministry of Agriculture were trained in its use.
    b. Olson mentioned that several institutions, including ZARI and ZamSeed, were very interested in training in crop modeling, and that we didn't know of anyone in Zambia with that knowledge. She said that the best would be to have people take a course regularly provided by the University of Florida, and that we could provide pre- and post-training support..

4. Incorporation of an "outgrower" household type in our model. Crawford indicated that this could easily be done, but would not do much to help determine whether an outgrower scheme would be feasible. The difference between a production activity supported by an outgrower scheme and one that is not is primarily that in the former the inputs would be provided free upfront and then repaid later in the season, and perhaps secondarily that the output prices would be different. These factors could result in different cropping plans, but that would not say anything useful about whether an outgrower scheme would be feasible. That question depends on whether the value chain could be structured so as to limit "side-selling," i.e., farmers selling outside the outgrower scheme, thus preventing the outgrower organization from recovering the costs of inputs provided to farmers. (Side-selling is most easily controlled when the crop grown needs specialized processing that is provided only by the outgrower organization.) Another issue is whether services provided by the outgrower organization can be provided efficiently enough to be covered by the spread between the price paid to outgrowers and the price earned from final sale of the output.[8]

5. Incorporating seasonality of food and cash availability in the household models, and including protein as well as calories. This would be relatively easy, but would depend on the available of additional funds to support further work with the household models.[9]

6. Agroforestry and conservation agriculture. Discussion under (1) above relates to this. Also, IAPRI has an on-going study of impacts of conservation agriculture. This involves

---

[7] Their project is correlating national farm survey data on crop production patterns with analysis of satellite imagery, to estimate production trends for specific crops within a given season.

[8] There is a big literature on vertically integrated schemes such as those typical in the cotton industry. See for example *Organization and Performance of Cotton Sectors in Africa: Learning From Reform Experience*, eds. David L. Tschirley, Colin Poulton, & Patrick Labaste, Washington D.C.: The World Bank, 2009.

[9] Funds carried forward during the no-cost extension period (through April 2015) need, at least for now, to be reserved to support completion of remaining activities in Kenya.

additional analysis of the CFS data, but farmer focus groups (including some to be carried out next week in Chipata by Brian Mulenga and Hambulo Ngoma). Lastly, a PhD student at MSU, Phil Grabowski, is finishing his dissertation on conservation agriculture in November. His PhD research was conducted in Eastern Province, following earlier MS research in Mozambique.

7. Anna noted USAID's interest in building the capacity of the M&E unit in the Ministry of Agriculture to carry out policy-related analysis using survey data and simple models. I suggested that examples of such analysis that could be done relatively easily would include preparation and maintenance of crop budgets, and basic investment analysis (e.g., of proposed agroforestry activities). Our relatively simple farm household models, which are linear programming models implemented in Excel, could also potentially be used by staff in the M&E unit. However, that would require some training in linear programming methods, and short-term support.

8. Lastly, in connection with an inquiry that Anna made of USAID/BFS regarding what procurement mechanisms might be available for mission buy-in, I said that I could provide information on two current MSU projects, the Food Security Policy Innovation Lab (funded by BFS) and the Global Center for Food Systems Innovation (funded by USAID/Global Development Lab and BFS). Web sites for these two projects, respectively are:

   - http://fsg.afre.msu.edu
   - http://gcfsi.isp.msu.edu

IAPRI Team

During our visit, we had informal meetings and briefed the team on our project activities. Several IAPRI researchers were able to attend our Tuesday presentation. On Friday, Crawford met Chance Kabaghe and Antony Chapoto to discuss next steps for the Food Security project.

Olson discussed with Chamberlin the deforestation study that he and Boos are doing. He said that they are planning to compare globally available land cover datasets from 2000 to 2010 for Zambia to identify areas where the forest class had changed. He thought that us doing an analysis of changing NDVI using MODSI data would be useful complementary information; it would identify areas of forest degradation and change on an annual or more basis. This would identify areas for further follow-up in the field. Olson also said that we could download the newly available spatial precipitation dataset CHIRPS for Africa and send to Chamberlin.

Next Steps

Activities identified for follow-up are listed below.
1. In the short run:
   a. Revise the PowerPoint presentations to take into account comments received during our visit.
   b. Provide information and data as noted above.
2. In the medium run:

a. Complete project reports on the work conducted in Zambia under the project. This would include the following, which (except for (vii)) are in complete draft form needing relatively minor additional work:[10]
    i. Wineman and Crawford, "Climate Change and Crop Choice in Zambia: A Mathematical Programming Approach."
    ii. Mulenga and Wineman, "Climate Trends and Farmers' Perceptions of Climate Change in Zambia."
    iii. Mulenga, "Climate Change Impact on Agricultural Production and Adaptation Strategies: Farmers' Perceptions and Experiences."
    iv. Wineman, "Modeling Minimum Tillage among Smallholders in Eastern Zambia."
    v. Wineman, "Maize Production in the Future." (Likely to be incorporated as part of another report.)
    vi. Wineman, "Sensitivity of Field Crops to Climate Shocks in Zambia" (Draft available soon)
    vii. Technical reports and articles on historical and projected climate, impact of climate variability and change on crop productivity, and results from analyzing potential adaptation strategies.
b. Draft policy briefs and research papers for publication and dissemination.
c. Consider possible extensions of work conducted in Zambia, time and resources permitting. These might include:
    i. Assessment of impact of climate change on surface water available for irrigation, and identifying areas of potential irrigation for rice and maize. This would involve calibrating a hydrological model to the regions of interest in Zambia, and linking it to observed and projected climate data, and to rice and maize crop models. This would be similar to work being supported by USAID/Tanzania.
    ii. Identify changes in forest and woodland productivity (degradation) and deforestation, and the year the changes occurred across Zambia. The analysis would identify changes in productivity in agricultural land during the same time period. This would entail statistical analysis of satellite imagery data (NASA's MODIS/GIMMS). The time period could be between 2000-2012 (annually) to complement the land cover change work being done by Boos/Chamberlin, or for a longer time period, 1982-2012 but at a coarser resolution. This could be done by a remote sensing specialist at MSU and a statistician at who collaborates with Olson's team (we have done this for East Africa already).
    iii. Capacity building of ZARI, Ministry of Agriculture and others on crop modeling.
    iv. Modification of the household model to incorporate (a) seasonality of cash and food flows, (b) expanded impacts on nutritional indicators, e.g., protein as well as calories, (c) improved modeling of minimum tillage (dependent on additional information), and (d) improved analysis of risk and vulnerability.

---

[10] Another paper is also available, entitled, "Multidimensional Household Food Security Measurement in Rural Zambia," by Ayala Wineman. This is not a direct output of the project, but is potentially of interest.

d. Presentation of work on Zambia at further project reporting or outreach events, including a final project briefing in USAID/Washington.

Annex A

Calendar of Activities and Persons Met

Sunday, August 17, 2014

    11:50 p.m.:   Arrival, Lusaka

Monday, August 18

    Seminar preparation and meetings at IAPRI

Tuesday, August 19

    9:00 a.m. to 2:00 p.m. Seminar and IAPRI and lunch
    2:00 p.m. to 5:00 p.m. Follow-up meetings at IAPRI

Wednesday, August 20

    6:00 a.m. to 2:00 p.m.: Travel from Lusaka to Chipata
    3:00 p.m. to 5:30 p.m.: Feedback focus group discussions with farmers in Chiparamba block

Thursday, August 21

    8:30 a.m.:   Meeting with District Agricultural Coordinating Officer and Senior
                Agricultural Officer, Chipata
    10:00 a.m. to 6:30 p.m.: Return to Lusaka

Friday, August 22

    8:30 a.m.:   Crawford meeting with Chance Kabaghe, Executive Director, IAPRI, and
                Antony Chapoto, Research Director, IAPRI
    10:00 a.m.: Crawford and Olson meeting with Anna Toness, Economic Growth Team
                Leader, and Brian Martalus, Feed the Future Division Chief, USAID/Lusaka
    12:00 p.m.   Lunch with Antony Chapoto, Research Director, IAPRI
    2:00 p.m. to 5:00 p.m.: at IAPRI

Saturday, August 23

    Departure from Lusaka (Olson at 12:35 p.m., to Dar es Salaam

Sunday, August 24

    Crawford departure at 10:50 a.m. to Detroit. (Originally scheduled departure flight on
    Saturday at 11:50 p.m. was cancelled.)

Annex B

Contact Information

Name	Contact Information
Chabala, Lydia M.	Lecturer, Soil Science Department, UNZA Mobile: +260 955 880217 E-mail: Lydia.chabala@gmail.com
IAPRI team members met	Chance Kabaghe, Executive Director Ballard Zulu, Outreach Director Antony Chapoto, Research Director Nick Sitko, Chief of Party Brian Mulenga, Research Fellow Jordan Chamberlin, Research Fellow Rhoda Mofya-Mukuka, Research Fellow
Kahalawe, Alphonse	District Agricultural Coordinating Officer – Chipata Mobile: +260-977-306410 E-mail: kasoutakay@yahoo.com
Kambole, Chinyanta	Acting Senior Agricultural Officer Chipata District Mobile: +260 977 658801 Email: chinyantakams@gmail.com
Likukela, David	Agricultural Extension Agent Chiparamba Block, Chipata District.
Martalus, Brian	Feed the Future Division Chief, USAID/Zambia Tel.: +260-211-357209; mobile +260-971-254316 E-mail: bmartalus@usaid.gov
Msoni, Ronald	Project Agronomist, FAO House No. 5, Addis Ababa Drive, Ridgeway, P.O. Box 30563, Lusaka Tel.: +260-211-252277 Mobile: +260-977-751263 E-mail: Ronald.Msoni@fao.org
Toness, Anna	Economic Growth Team Leader, USAID/Zambia Tel: +260-211-357000 Ext 7146 (Office); +260-211-357-146 (Office direct); 0974-771-290 (cell) E-mail: atoness@usaid.gov

Annex 3

Seminar Agenda

AGENDA

Meeting on "The Latest Results on Climate Change Projections, Impacts, and Policy Implications for Zambia" by Indaba Agricultural Policy Research Institute (IAPRI), and Michigan State University, at IAPRI on Tuesday 19th August, 2014.

Objectives of the meeting

1. To provide government, cooperating partners, and other private and public stakeholders with the latest information on:
   a. Impacts of recent and projected future climate change on crop productivity, and effectiveness of potential adaptation technologies;
   b. climate change impacts on household decision-making and selected sectors of the economy in Zambia; and
   c. recommended adaptation strategies for smallholder agricultural households in Zambia.

Tuesday 19th August 2014

9:00-9:30   Registration

Moderated by Ballard Zulu, Outreach Director (IAPRI)

9:30-10:00   Welcome & Introductory Remarks by Mr Chance Kabaghe, Executive Director (IAPRI)

10:00-10:30   ***Presentation of Research Findings: Updated Climate and Crop Productivity Projections and Implications for Zambia by Jennifer Olson (Michigan State University)***

10:30-11:00   ***Presentation of Research Findings: Updated Results on Household Decision-making responding to climate change by Eric Crawford (Michigan State University)***

11:00 -12:00   Discussions on the two presentations & their policy implications for Zambia

12:00 – 12:30 Closing Remarks by Mr. Chance Kabaghe Executive Director, IAPRI

12:30-14:00   Lunch and departure of participants

Annex 4

Seminar Participants: MSU/IAPRI climate change seminar--19th August 2014

Name	Institution	Position	email	Phone
Marja Ojamen	Embassy of Finland	Counselor	marja.ojamen@formin.fi	977771378
Caleb Rudow	Peace corps/USAID	Volunteer	calebrudow@gmail.com	978381232
Hambulo Ngoma	NMBU-Norway	Researcher	hambulo.ngoma@nmbu.nw	963786788
Chabala Lydia	UNZA	Lecturer	lchabala@unza.zm	955880217
Collins Nkatiko	CFU	Executive director	cfu@iconnect.zm	965238007
Hunter Michelsen	Concern Worldwide	Agric. Marketing advisor	hunter.michelsen@concern.net	973030600
Musadabwe Chulu	Ministry of Agriculture	Agric. Economist	musadabwe@hotmail.com	977793069
Mtendere Mphatso	FAO	Program coordinator	mtendere.mphatso@fao.org	971651840
Ronald Msoni	FAO	Agronomist	Ronald.msoni@fao.org	977751262
Mwrho Maticindo	Norwegian Embassy	Senior program officer	lmic@mfa.no	975887995
Catherine Tembo	USAID	Climate change specialist	ctembo@usaid.gov	979324932
Anna Toness	USAID	Team leader	atoness@usaid.gov	
Rasa Kent	USAID	Natural resource mgt specialist	rakent@usaid.gov	
Harry Ngoma	USAID	Food security specialist	hngoma@usaid.gov	977435274
Diane Russel	USAID	Biodiversity specialist	dirussel@usaid.gov	
Mukelabai, MM	Zambia Meteorological Dept	Principal meteorologist	mukelabaim@gmail.com	
Peggy Thole	Zambia Meteorological Dept	Senior met. Officer	peggy_thole@yahoo.com	976489026
Chance Kabaghe	IAPRI	Executive director	chance.kabaghe@iapri.org.zm	
Jordan Chamberlin	MSU/IAPRI	Research fellow	chamb244@msu.edu	963621591
Rhoda Mofya-Mukuka	IAPRI	Research fellow	rhoda.mofya@iapri.org.zm	975570456
Munguzwe Hichaambwa	IAPRI	Senior research associate	munguzwe.hichaambwa@iapri.org.zm	977867610
Ballard Zulu	IAPRI	Outreach director	ballard.zulu@iapri.org.zm	977811700
Antony Chapoto	IAPRI	Research director	antony.chapoto@iapri.org.zm	
Brian Chisanga	IAPRI	Research associate	brian.chisanga@iapri.org.zm	975570348
Brian Mulenga	IAPRI	Research associate	brian.mulenga@iapri.org.zm	969716089