REPORT FOR THE WORKSHOP FOR THE ASSESSMENT OF CLIMATE NEEDS WITHIN THE GRAIN VALUE CHAIN HELD ON 12TH SEPTEMBER 2019 AT THE EAGC HEADQUATERS

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1. INTRODUCTION

According to a report by Africa Post-Harvest Loss Information System, climate change is expected to have a profound impact on agricultural productivity, post-harvest losses and the grain value chains. Given that grains form part of the staple foods of over 90% of the population in Kenya, this could seriously affect food security.

Climate change affects agricultural productivity both directly, by introducing changes in agro-ecological conditions (e.g. drought, variable precipitation, extreme weather events) and indirectly, by giving rise to new diseases and pests and can have significant consequences on grains post-harvest.

In an effort to address these challenges, EAGC recently partnered with the Climate Knowledge Development Network (CKDN) in a one-year project aimed at mitigating the effects of climate change on grain quality and Post-Harvest Losses. The project aims at increasing the use and understanding of co-produced reliable weather and climate services to inform decision making in the context of post harvesting, food security and market access planning, practices and policies.

In this regard, EAGC as a key player in the grain value chain held a workshop, on the 12th September 2019, at the EAGC Regional Office in Nairobi, to assess the climate needs within the grain value chain where a team of actors drawn from the sector brain stormed on demand driven needs to inform the next steps of the project implementation.

2. Opening of the meeting

The EAGC Regional Project Coordinator, Janet Ngombalu welcomed participants to the meeting from different private sectors, a step which manifested representation and also real effects of climate change. She facilitated a round of introductions session. Participants were drawn from the grain value chain including traders, processors, warehouse operators, financial institutions, climate information producers, insurance service providers, input suppliers, research institutions and government.

The agenda of the meeting was unanimously approved.

3. Workshop Presentations

3.1 Presentation of preliminary findings from GHUBs Survey on climate needs

Janet introduced the EAGC, CDKN partnership project where she highlighted the concept and the scene setting of the project noting that the project is responsive of climatic, social and economic factors among them the risks of climate change, regional food security and quality, food riots and food price stabilization.

The project is geared towards mitigating the effects of climate change that lead to 30-40% Post Harvest Loss due to climate variables.

The project is focused on identification, consolidation and packaging of climate specific information, promotion of adoption and adaption of climate resilient technologies and innovations as well as investment in gender responsive and socially inclusive climate actions.

It mainly targets the private sector who include farmers and traders, processors and policy makers through repackaging research info in an interactive digital app, and regular stakeholder engagements as well as publications that contribute to seasonal trends and their impact to cross border trade flows of grain commodities.

Climate data is informed by end user needs and provides climate diagnostics, predictions and early warning and in addition to providing evidence-based findings to inform policy making in regards to climate monitoring and disaster risk management.

EAGC Regional Programs Coordinator Janet Ngombalu introducing the EAGC -CDKN partnership program

The project aims at farming community hubs commonly known as grain trade business hubs which will act as a one stop centre for all farmer needs that will be supportive in service provision that will enhance eradication of climate change effects such as enhanced access to advisory services on climate change, access to equipment leasing, warehouses services to manage grain quality, presence of financial modalities such as structured banking around the G-hubs in addition to the access and dissemination of climate info from a centralized data base.

It will utilize data informed by climate information needs which will be integrated in an EAGC developed system for publication and other basic consumption.

EAGC saw the need to involve the private sector through peer learning to build a business case in investing in climate change proof agriculture, as a group that had been left out in the fight against climate change.

3.2 Presentation of preliminary findings from G-hubs survey on climate information needs for the grain sector

Peninah Gichuru, EAGC Monitoring and Evaluation Manager, presented findings of a user needs assessment from a farmer and trader level data collection carried out in Kenya and in Eastern Uganda. The survey focused on packaging, disseminating and the utilization of climate information and technologies. She also informed that the tool for data collection mainly focused on post-harvest losses and centred on G-hubs though they are not yet well established in Uganda.

Focus of the study

- Effects on production
- Effects of PHL including quality
- Information currently received
- Technologies learned and adopted to mitigate climate change
- Sources of information and technologies
- Modes of information and technologies dissemination
- Preferred mode of dissemination

Survey Methodology

The data collection adopted semi structured interviews with the number of G-hubs, youth below 30years (male and female) and adults above 30 years (male and female), as the parameters.

In Kenya, 11 G-hubs were sampled with a total of 26 respondents; youths were 4 males and 1 female, while adults were 14 males and 7 adults.

On the other hand, Uganda sampled 9 G-hubs with a total of 29 respondents; youths were 9 males and 3 females, while adults were 30 males and 13 female adults.

EAGC Monitoring and Evaluation Manager, Penina Gichuru presents on the data collection findings from the climate information needs assessments survey

Climate change effects raised by farmers

Respondents from both countries reported to have experienced similar climate change effects such as droughts, heavy destructive rains, increase in crop yields and prevalence of crops pests and diseases.

Aflatoxins, increase in storage pests and light weight grains were common to both countries, while Ugandans reported high costs of post-harvest handling transport and PHH management.

Respondents indicated that they increasingly adopted drought tolerant crops, abandoned other crops and adopted early maturing crops in addition to shifting to irrigation and other water harvesting practices such as terracing, use of basins and zero tillage.

49% of the farmers reported to have had challenges with aflatoxins while 38% had absolutely no idea whether they were dealing with aflatoxins. Additionally, only 45% of farmers are aware of the existence of some technologies that mitigate aflatoxin while the rest have no idea of aflatoxins at all. Those that are aware have an idea of hermetic bags, use of Aflasafe, tarpaulins for harvesting, drying and threshing, use of pallets in warehouses and adoption of proper maize drying techniques.

3.3 Group Work:

The participants were organised into two groups to answer four questions which would enable assessment of the impact of climate change on businesses, coping mechanisms businesses are utilizing, information and technologies they may be disseminating to combat climate change and their own information and knowledge gaps.

Group 1 comprised of service providers; financial institutions, Government agencies (Metrological department and National Disaster Management Agency), insurance agencies, research institutions and the ICT service provider value edge.

Group 2 comprised of direct actor in the grain value chain that included grain traders, Agro-input companies, equipment suppliers, NGOs and IGAD Climate Prediction and Application Centre (ICPAC).

The group work results were as follows:

3.3.1 Impact of climate change on businesses

Groups	Category of participants	Impact on business operations
Group 1	• Financial institutions • Government agencies • Insurance agencies • Research institutions • ICT service provider	• Increased cost of insurance • Decreased food production undermining government development efforts increasing levels of vulnerability, poverty and malnutrition • Infrastructure damaging increasing cost of maintenance • demand for more research funding to address climate change • High levels of non- performing loans • reduced appetite for financial institutions to lend to the agricultural sector
Group 2	Input suppliers	• High variation in input demand-demand high when it rains and low when rains are low • Demand for equipment e.g driers and cleaners increased • Reduce demand for grain silos • Ploughing business reduced as farmers reduce area under cultivation
	Traders	• Cost of production (purchase of grains) increases • Consumers have to pay more for products • Increased post-harvest costs • grain aggregators have inadequate supplies • Grain quality is very poor • Increased importation of grain resulting to higher food costs • Reduced profits

3.3.2 Coping mechanism businesses are using to mitigate climate change

Groups	Category of participants	Coping mechanisms
Group 1	• Financial institutions	• Work with loan guarantees and insurance • Increase collateral requirement to access loans • reduce credit to the agricultural sector
	• Insurance agencies	• Uses more data to improve efficiency in risk pricing • Using alternative management solution for farmers e.g early, climate profiling etc
	• Government agencies	• Development of climate change policies • Set up emergency funds • Funding programs to combat climate change
	• Research institutions	• Investing in research for new technologies
Group 2	Traders	• Venturing into new markets to source for grains • diversifying product to substitute some grains • Processor have to resort to more imports to maintain good supply

3.3.3 Information, technologies and practices stakeholders are disseminating or promoting to mitigate climate change

Groups	Category of participants	Information, Technology and Practice promoted
Group 1	• Government agencies	**Information** • Weather forecast • Agro-Met advisory **Technologies** • Promotion of smart irrigation technologies • drought tolerant crop varieties • climate proofed infrastructure- roads, water etc • use of digital platforms to disseminate information **Practices** • Conservation/ Climate smart agriculture • mega water harvesting structures
	• Insurance agencies	• Agro-weather advisory based index Alternative insurance risk pricing e.g early planting
	• NDMA	• drought early warning bulletin • Monthly and seasonal food security reports
	• Research institutions	• Food situational assessment reports

		• Cost of production reports based on different production systems
	• Financial institutions	• Farmer budgeting techniques
Group 2	Traders	**Information** • Training on rainwater harvesting • Disseminate climate information • Field surveys farmer challenges and information needs • Technology/ solutions show case by processors • Training farmers by their buyers' traders-conservation farming • Demo farmers and information dissemination platforms for farmers **Technologies** • Hermetic storage • Biodigester for organic fertilizer • Dryers, cleaner, storage • Solar silos with driers • Farm in -box technology **Practices** • Rainwater harvesting

3.3.4 Information, Knowledge and Capacity needs

Group	Information	Knowledge	Capacity needs
Group 1	• Quality data readily available to support decisions • Insurance awareness • available technologies	• Data collection • Good agricultural practices • Data analysis including indigenous knowledge	• Information dissemination packaging methods • Weather data interpretation • Staff training • Equipment e.g. digital platforms, automated weather stations etc
Group 2	• Awareness on climate change and impact	• Conservation agriculture • Water harvesting	• Promotion of innovations to farmers

3.4 Developing an infographic to demonstrate a climate smart value chain in the grain sector

The EAGC Regional MIS and Communications Manager, Jacinta Mwau facilitated a group work session that developed a maize value chain with the identification of the various actors, how they are linked within the value chain, climate risks and opportunities that exist in their work processes as well as from the interactions with other actors in the value chain. The session linked the climate information needs and format in which the information is required by various actors within the maize value chain to the opportunities that exist.

EAGC Regional Market Information Systems & Communications Manager, Jacinta Mwau takes the participants through the development of an infographic to demonstrate climate smart value chains within the grain sector


Stakeholders participate in the group work sessions to consolidate climate needs assessment

Below is a summary of the session group work

Infographic –Climate Smart grain value chains in the grain sector

Actors in the grain VC	**Interactions with other actors in the VC**	**Risks and opportunities**	**Information Needs and format**
Farmers	Traders Processors Warehouse operators Input and Equipment Suppliers Financial institutions Insurance service providers Government institutions NGOs	Crop failure due to flooding or lack of rainfall or increased temperatures Stunted plant growth Lower farmer incomes due to reduced quantities and quality Increased imports as a result of crop failure Climate change has caused poor quality and quantity of grain harvest-***Opportunity to plant climate resilient varieties*** (Drought resistant varieties) , GMO??? *Use of synthetic inputs*-***Opportunity for organic practices*** Reduced amounts of rainfall. ***Opportunity for Efficient Irrigation Management.***	Weather information on increase or decrease in temperatures, changes in precipitation patterns, changes in extreme **weather** events, and reductions in water availability to address reduced **agricultural** productivity-***SMS communication, Through GHUBS meetings etc*** *Rainfall forecast through*-***SMS communication*** Agronomic advice to held mitigate climate change –***SMS communication***

		Conserving water use is vital to any farm, particularly in times of drought rising summer temperatures cause soils to become drier- Opportunities to increase soil health **Opportunity for** Pushing for Climate-Friendly Policies Weeds, pests, and fungi infestation which thrives under warmer temperatures, wetter climates, and increased CO_2 levels- ***Opportunity to learn on weed , pests and fungi management skills and practices*** High moisture content in grains especially maize leading to aflatoxin infestation – ***Opportunity for training on Post Harvest Management*** ***Opportunity -development of heat- and drought-resistant high-yielding varieties to ensure food security in the country.***	
Traders	Farmers Processors Warehouse operators Input and Equipment Suppliers Financial institutions Insurance service providers Logistics service providers	Floods affect logistics for distribution of grains Reduced accessibility to food for trade –Opportunity for developing a food balance sheet Climate change affects quality which poses a risk of clients rejecting grain deliveries – lower incomes. Climate change increases the prices of major crops in some	-Information on rainfall forecasts –***SMS , whats app communication*** Information on yield estimates per region using satellite data etc-***SMS and whats app***

		regions where traders source for grains for trade. ***–Opportunity for market information systems to disseminate market prices for grains***	
Processors	Farmers Traders Warehouse operators Input and Equipment Suppliers Financial institutions Insurance service providers Logistics service providers	climate change affects the distribution of agricultural production and, therefore, grain supply to processors ***–Regional food balance sheet*** Reduced grain supply for processing causes losses as a result of idle plants Operations of mills at lower that installed capacity due to lower volumes of grain supply Increased prices for grains as raw materials Pour quality grain from harvest which leads to lower quality of millers ultimate product –change in consumer preferences	
Warehouse operators	Farmers Traders Processors Input and equipment Suppliers Financial institutions Insurance service providers Government institutions NGOs	Deterioration of grain quality as a result of high moisture content and aflatoxin in stored grain –Storage losses **Climate change** may **affect** the quality of **stored grain** by lowering micronutrient levels, decrease protein quality etc **–Opportunity to gain skills in Warehouse Operations Management** and grain management /preservation Increase in atmospheric humidity - stored grain is at a risk due to the favorable conditions developed for the growth of insect pests	Weather information on increase or decrease in temperatures- ***communication through SMS, Whatsapp , emails***
Input suppliers / Equipment suppliers	Farmers Traders Processors Input Suppliers	Climate change poses the risk of input suppliers investing in the wrong input suppliers which are not climate friendly ***–Opportunity to produce climate friendly inputs***	Weather information in extreme **weather** events, temperatures , precipitation patterns etc – Communication through ***SMS, whats app , emails***

	Financial institutions Insurance service providers NGOs	***such as fertilizers , seed varieties etc*** Risk of equipment being spoilt by extreme weather events such as strong winds spoiling sprayers, wind mills etc ***–Opportunity to invest in higher quality of equipment that can withstand extreme weather events***	
Financial institutions /Insurance service providers	Farmers Traders Processors Input Suppliers Government institutions NGOs	Risk of loss of credit administered to grain value chain actors due to poor predictions of climate change effects ***–Opportunity to receive climate information for informed financing solutions*** Risk of avoiding to administer credit to grain value chain actors as a result of lack of information on financing opportunities within the sector (perceptions of low profitability and high risks) – ***Opportunity for climate finance*** Opportunity-Providing the necessary technical assistance to build the capacities of everyone involved in the financial ecosystem, including both lenders and borrowers Opportunity- directing climate finance into agriculture and linking financial institutions, smallholders and agricultural SMEs Opportunity - increasing the amount of capital available for climate-smart investments in agriculture	
Government institutions	Farmers Traders Input Suppliers Financial institutions	Climate change effects are happening very fast and government institutions need to invest in resources to track the drivers and factors leading to climate change as well as	

	Insurance service providers Government institutions NGOs	mitigation and adaptation strategies ***Opportunity- Build capacity of government officials at both the ministry and county levels to communicate climate concerns*** Gender related climate change risks ***Opportunity- gender-sensitive climate budgeting,*** Misleading policies in mitigating climate change effects ***Opportunity - Preparation of policies, legislation and plans of action related to climate change*** Most of the times , climate change effects catch the government unawares or unprepared ***Opportunity- Preparedness for climate-induced disaster risk reduction***	

Stakeholders comments and the way forward

1. EAGC to engage the private sector members that had been left out of the engagement yet their contributions were indispensable:
    - Syngenta
    - Hunger Project (Uganda)
    - SBM Bank
    - We Farm
    - AGRA
    - Bidco
    - Re Insurance

2. Farmers/ SMEs to be sensitized on eco-friendly structures to mitigate climate change
3. A standardized method of disseminating information to be developed to facilitate provision of uniform, timely and accurate data to farmers
4. Information disseminated to farmers should be categorized accordingly; equipment, storage
5. Impact of increased income from reduction of post-harvest losses should be felt
6. Farmers should be sensitized on available technologies that are used in aflatoxin detection and eradication
7. Specifications on the correct use of Hermetic Storage Technologies to be made
8. Farmers to be sensitized and encouraged on practicing conservation agriculture and water harvesting technologies including the adoption of growing grains under irrigation
9. EAGC to lobby for uptake of insurance by all the value chain stakeholders and promote the sensitization and understanding of insurance schemes
10. Insurance schemes to cover crops holistically
11. Capacity building of the grain value chain actors to acquire essential skills
12. Facilitate partnerships that promote a learning culture and affordability
13. Carry out a study on the increased abandonment of crops to drought resistant crops and the high costs of production inputs

User Assessment Workshop Evaluation

1. Participants profile
   - Nine participating completed the workshop evaluation form. The participants were all from Kenya.
2. Gender
   - They were five males and four females.
3. The participants were drawn from different institutions as follows:
   - ICT/ Systems developers- 2
   - Regional/ national government agencies -3
   - Research-1
   - NGO – 1
   - Processor-1
   - Financier- 1
4. Was this your first engagement with the project?
   - Among the participants five were engaging with the project for the first time while four had previously engaged with the project.
5. What is your most valuable takeaway from the event?
   The participants highlighted the following as the most valuable take away from the workshop:
   - Climate change information is broader than weather information
   - How climate change is affecting food production as farmers abandon some crops without replacement
   - Needs of users of climate change
   - Importance of quality data to inform climate change decisions
   - There is a lot of information available but not shared or made public
   - Need to work together
   - other institutions involved in climate change issues
   - Climate change does not only affect production but has far reaching effects on trade, consumption and livelihoods of all stakeholders
   - opportunities therein climate change for diversification
   - Need for value chain collaboration to mitigate climate risks

6. Do you think the event met its set objectives?
   All except participants that completed the evaluation indicated that the event met its set objectives.

7. If yes, why?
   The reasons cited for the achievement were:
   - The presentation well-articulated the effects of climate change and the coping strategies for different stakeholders
   - Different stakeholders gave what type of information they needed and provided
   - Attendees had a lot to share and learn
   - It revealed the disconnect in climate information flow

- There was holistic conversation and discussion on way forward

8. The participants that felt the event did not met objective give the reason that the attendance of the meeting was low, and that the duration of workshop was too short and not sufficient to complete discussions.

9. What would be done differently as a result of the event?

   In regard to what the participants would do differently they stated that they would do the following

   - Increase the duration of the workshop
   - Increase meeting representation
   - conduct more assessment to design climate change information

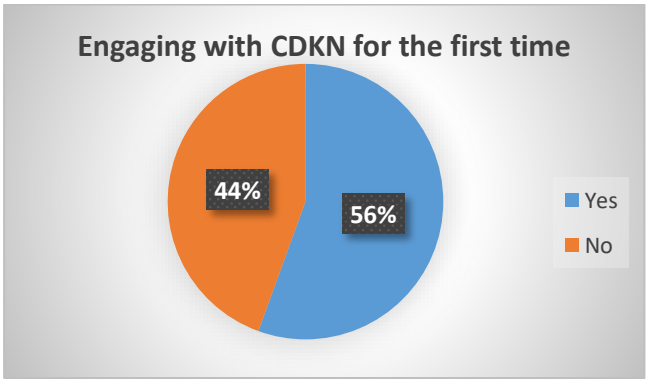
10. How are going to use what you have learned in your day -to -day work?

    Five participants provide responses to the question. Two of the respondents appear not to have understood the question. The responses were as follows:

    - Partnerships with other stakeholders e.g. ICPAC, NDMA and EAGC
    - in policy recommendation on ways to reduce climate effects
    - Improve packaging of climate information

11. Is this the first time to engage with CDKN

    Five participants that reported not to have engaged with the project before also stated the workshop was the first-time, they were engaging with CDKN.



12. What platform do you use to access CDKN?

Platform	No. of respondents
CDKN website	6
CDKN social media	1
CDKN newsletter	0
Others (EAGC)	1
No response	1

13. How often do you access information from CDKN?
    - Regular-1
    - Occassionally-3
    - Never-5

    Most of the respondents never access information CDKN information

14. What worked well regarding facilitation

What worked well	No. respondents
Good presentations	4
Everything	2
Informed facilitators	1
Interactive sessions	3

15. Suggestions on facilitation of future workshop
    - Share reports and presentation before the workshop
    - more time for discussions
    - none
    - require having a structured and easy way of presenting the information to participants
    - more stakeholders involved (larger group)

16. What worked well regarding workshop logistics

What worked well	No. respondents
Communication with participants	3
Meals	2
Everything	2
Well organize room	1
No response	3

17. Suggestion for improvement or further comments
    - Participants should ensure they are available throughout the workshop (1)
    - Get all stakeholders in the AGTS so as to promote more collaboration in combating climate change risks
    - Frequent follow -up with attendee confirmations
    - More time allocated

List of Participants at the workshop to assess climate information needs within the grain value chain

	Name	Organization
1.	Christopher Meisilal	Kenya Meteorological Department
2.	Kenneth Mwangi	ICPAC
3.	John Mwangi	NDMA
4.	Joseph Opiyo	Tegemeo Institute
5.	Eunice Mutua	Select Fresh Produce Kenya Ltd
6.	Stella Ndirangu	Acre Africa
7.	Joyce Kabura	Vision Fund International
8.	Abraham Olefa	KCB Agribuiness
9.	Simiyu Wamalwa	Cimbria EA Ltd
10.	Allan Kiprop	Value Edge Ltd
11.	Fredrick Nyambare	Yara EA Ltd
12.	Linet Malit	Kentainers Ltd
13.	Miriam Ndungwa	Spice World Limited
14.	Njoroge Mucheru	Christian Aid
15.	Janet Ngombalu	EAGC
16.	Jacinta Mwau	EAGC
17.	Penina Gichuru	EAGC
18.	Kim Mhando	EAGC
19.	James Kuria	EAGC
20.	Lynette Kithinji	EAGC