# POST HARVEST LOSS AND CLIMATE RISK MANAGEMENT

#### AN INTEGRATED VALUE CHAIN APPROACH

Dr. A. Kateka

Dr. A Hepelwa

Department of Agricultural Economics and Business

8<sup>th</sup> November, 2017

#### INTRODUCTION

- Uhy post harvest loss
- Why climate change in post harvest loss discourse?
- Why the value chain climate risk management framework
- The value chain climate risk management framework

#### Why post harvest loss management?

 Definition: loss of agricultural products from before harvest to post consumption
Focus: 1) post harvest ignoring the aspect of loss at farm level and loss at post consumption level.

Significant amount of food is lost through inefficient harvesting processes and through food waste

#### Why post harvest loss management

- Food insecurity is Africa's major concern
- Poor farmers in Africa produce about 80% of food consumed
- Poor households are the least equipped to handle post harvest loss

Agricultural innovations that are increasing agricultural yields are not matched with enhanced post harvest loss management

### The big questions !!!

Will agricultural innovations improve or worsen food security and poverty of rural households?

Will a possible higher cost of agricultural innovations with possible higher postharvest losses reduce the total farm profitability for the smallholders? Why climate change in post harvest loss discourse?

The least subject discussed in PHLM

Agricultural systems are deeply interconnected with climate

Climate change in agriculture implies impacts at farm level- how it impacts crop production

# Why climate change in post harvest loss discourse?

COP 23- The annual climate change talks are taking place in Bonn (6<sup>th</sup> – 17 Nov). What is in it for PHLM?

Several recent significant weather related disasters and calamities (recent flooding in Dar) how do they impact PHLM

Average temperatures across Tanzania will increase by 1 °C to 3 °C by 2050- what does this mean for post harvest management

- Post harvest agricultural systems are dominated by value chains- from preharvesting processes to post consuming processes
- To what extent is climate change affecting these value chains and how can they adapt to climate change?

Why the value chain climate risk management framework The growing discussion about climate change and agriculture is at farm level. But relatively little analysis is put on how climate change is affecting food chains from the production to the consuming level. Adopting a value chain perspective is critical to addressing climate change and achieving the Sustainable Development Goal of poverty reduction

Value chains include an array of processes and activities that are involved in feeding a population: growing, harvesting, processing, packaging, transporting, marketing, consumption, and disposal of food and food-related items.

- Value chains operate within and are influenced by social, political, economic, and environmental contexts.
- There is increasing awareness that the impacts of climate change threaten the sustainability of these value chains, affecting the profits and livelihoods of all actors involved.

Development of viable agricultural value chains must therefore be climateresilient, with all actors along the chain actively engaged in managing climate risks.

Biophysical and environmental factorsland soil and water

Research and development drives innovation-improved seeds, fertilizers, storage, processing and distribution

Infrastructure drivers- roads, rail, irrigation and energy

Economic drivers-incomes, prices and poverty

Socio-cultural drivers- traditions, social norms, religion and rituals, social stratification and gender

 Power dynamics and equity issuesaccess to food, access to resources to grow and buy food, and resources to mitigate and adapt to a changing climate
Demographic drivers- education, urbanization, age,

Each component affect other pieces of the chain.

Policy, market, social, technological, and biophysical environments all influence actors within food value chain.

Therefore, each component of the food value chain is linked to their social, economic, and environmental contexts

Historical bias in research towards narrowly focused work has resulted in a body of literature that is largely focused on individual elements of the food value chain rather than the bigger picture.

A food value chain approach, leads to the understanding of the linkages, feedback loops and interactions between the numerous dimensions of the chain, increasing our understanding beyond simply the individual components

The value chain climate risk management framework □Value chain framework for climate risk management can be adopted for any agricultural value chains and highlights how different actors can support CRM efforts

The framework also draws on existing resilience and adaptive capacity frameworks (which were developed as part of the Africa Climate Change Resilience Alliance (ACCRA)).

- consists of three dimensions:
- Climate risk assessment
- Adaptive management
- Responding to shocks

#### Climate risk assessment

□ For food value chain actors, it involves understanding current and future climate risks, analyzing the implications for value chain activities and assessing different options for minimizing the negative impacts at each node.

I value chain actors must have access to reliable climate and weather information, as well as the ability to use it for planning and decision-making.

#### **Adaptive management**

As the climate continues to change, actors in the food chain need to adjust operations to deal with these new conditions.

Regardless of the uncertainty associated with climate models and projections, adaptation actions are needed in post harvest loss management in order to eliminate or reduce the vulnerability of the value chain to the impacts of climate change.

#### Adaptive management

It is an iterative learning process, which is informed by weather and climate information and supported by knowledge of costs and benefits of different options in relation to different climate change scenarios.

#### **Adaptive management**

For value chain actors, it involves monitoring climate risks and the performance of value chain activities, making adjustments and taking actions in response to what is being observed.

The types of actions taken may include diversification of activities, products and income sources; protecting key assets from climate hazards; and improving efficiency in management of resources needed for value chain activities.

#### **Responding to shocks**

Responding to shocks involves short-term actions to cope with shocks that cannot be avoided through adaptive management.

Extreme weather events are expected to increase in frequency and intensity, value chain actors will be affected by hazards that disrupt their activities and have negative effects on their income and food security.

#### **Responding to shocks**

Actors must be prepared to absorb these shocks, through their own coping mechanisms and/or with external support that aids them in responding.

## **Responding to shocks**

- Dimensions of the value chain framework described above are relevant at all of the stages of the value chain, but their practical implementation will differ depending on the actor.
- Farmers
- Storage
- Processors
- Transporters
- Marketers
- Consumers

# Points

- No reliable data
- Where is met
- Focus on small scale farmer
- Who are the key drivers of the chain
- How is climate change affecting the chain