IMPROVING MAIZE PRODUCTIVITY THROUGH THE PROMOTION OF SUSTAINABLE AND PROFITABLE USE OF FERTILIZER: THE ROLE OF COMPLEMENTARY AND MANAGEMENT PRACTICES

JOSEPH S. KANYAMUKA

(MSc Student, LUANAR/Bunda)

Guiding Investments in Sustainable Agricultural Intensification in Malawi

Capital Hotel

19th September, 2013

Introduction

- Sustainable agric. is the successful mgt of resources to satisfy changing human needs while conserving natural resources (Zerihun et al., 2013)

- Levy (2005) identified three key challenges for sustainable agriculture in Mw:
  - Lack of diversity in farming system has negative consequences for pests & disease control, food security & livelihoods & agric. biodiversity
  - Intensity of maize cultivation/area has adverse consequences for soil fertility mgt, food security & livelihoods at hh level
  - Long-term deterioration of soil fertility has negative consequences for intensity of cultivation &for food security & livelihoods

Introduction ct'd

- **Key question**
  - How to make the use of fertilizer in FISP more sustainable and lower the costs?

FISP & Sustainability: Do Complementary Measures matter?

- Sustainable agric technologies can reduce the need for more input use (Kamau et al., 2013)
- Lower the costs-making the FISP less expensive
- Environmental benefits

Introduction Ct'd

- One of sustainable & intensified nutrient concepts that have proven successful in famer's field is Integrated Soil Fertility Management (ISFM)(Sommer et al., 2013)

- ISFM defined as 'application of soil fertility mgt practices & knowledge to adapt these to local conditions, which max. fertilizer & organic resource use efficiency & crop productivity

- These practices include appropriate fertilizer & organic input mgt in combination with utilization of improved seeds

Problem Statement

- One of the major ironies in applied research is that use of modern inputs appears to be marginally profitable or even unprofitable

- Input & technology intensification alone cannot raise farm productivity if attention is not also on complementary mgt practices enhancing soil fertility & promotes efficiency use of fertilizers & improved seeds

- Policy challenge for Mw & African govts is adoption of practices (maize-legume intercropping, organic manure, etc) needed to restore soil properties & enhance response of inorganic fertilizer remains low.

Objectives

❑ Overall Objective

- To identify the strategies to promote the sustainable & profitable use of fertilizer & improved seed use among smallholder maize farmers in Mw

❑ Specific Objectives

- To identify complementary & mgt practices to the expansion of fertilizer & improved seed use that can raise maize productivity among smallholder farmers in the four agro-ecological zones in Mw.

- To determine key factors that influence farmers' decisions on incidence & intensity of adoption of complementary & mgt technologies to FISP among smallholder farmers

- To provide appropriate & relevant policy guidance to the promotion of fertilizer input intensification strategies that can raise maize productivity & food security.

Methodology

❑ Study Area (planning stage)

- Four agro-ecological zones in Mw which are major producers of maize & with high agricultural potential

- Four major agro-ecological zones categorised based on soil types, vegetation types & climatic conditions (Saka et al., 2006).
  - ➢ High altitude plateau,
  - ➢ Medium altitude plateau,
  - ➢ Lake shore plain
  - ➢ Shire Valley

❑ Data Collection (planning stage)

- Experimental approach
- Following famers through 5 months period of maize cultivation
- Monitoring & recording of field activities
- Data to be collected at hh & plot level.

❑ Sampling Techniques

- Agro-ecological zones
- Districts - based on high inclusivity of maize crop.
- Extension planning area (EPA) will purposively be selected.
- Individual farmers will be randomly selected

Expected outcomes

- Appropriate complementary measures to FISP in each of the agro-ecological zones (maize-based farming systems)

- Less use of chemical fertilizer among the adopters

Point of discussion

- Do you think the complementary technologies are feasible in the Malawian Context?
  - Maize-legume intercropping, organic manure, agro-forestry, crop rotation, CA, etc

THANK YOU FOR YOUR ATTENTION!!