

# **THE KENYA SOIL HEALTH CONSORTIUM - KSHC**

**By:**

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# INTRODUCTION

- Despite several breakthroughs in agricultural research in Kenya, crop productivity in smallholder farms has been declining over the years
- A closer look at the situation reveals that, while farmers **easily adopt** new crop varieties, pesticides and disease controlling chemicals, the rate of adoption of Integrated Soil Fertility Management (ISFM) Innovations is **Extremely Low**.

# Why is Adoption of ISFM Innovations Low?

- Many institutions (KARI, universities, KEFRI, CGIAR centres etc) have carried out Integrated Soil Fertility Management (ISFM) research in this country with very good breakthroughs.
- However these institutions have been working in **isolation of each other** and often for the same group of farmers, thus resulting in many inappropriate technology recommendations that confuse target farmers and lower ISFM technology adoption.
- This also leads to duplication of efforts and waste of resources.

# The effects of working in isolation

- **Table 1. Different soil sampling depths used to collect soil samples for analysis**

Soil Sampling depths (cm)			
0 -10	10 - 20	20-50	60-80
0-15	10 - 30	30-50	60-100
0-20	15-25	40-60	70-90
0-30	15-30	40-70	70-100
0-45	20-30	50-70	95-150
0-60	20-40		100-150

# The effects of working in isolation Cont.

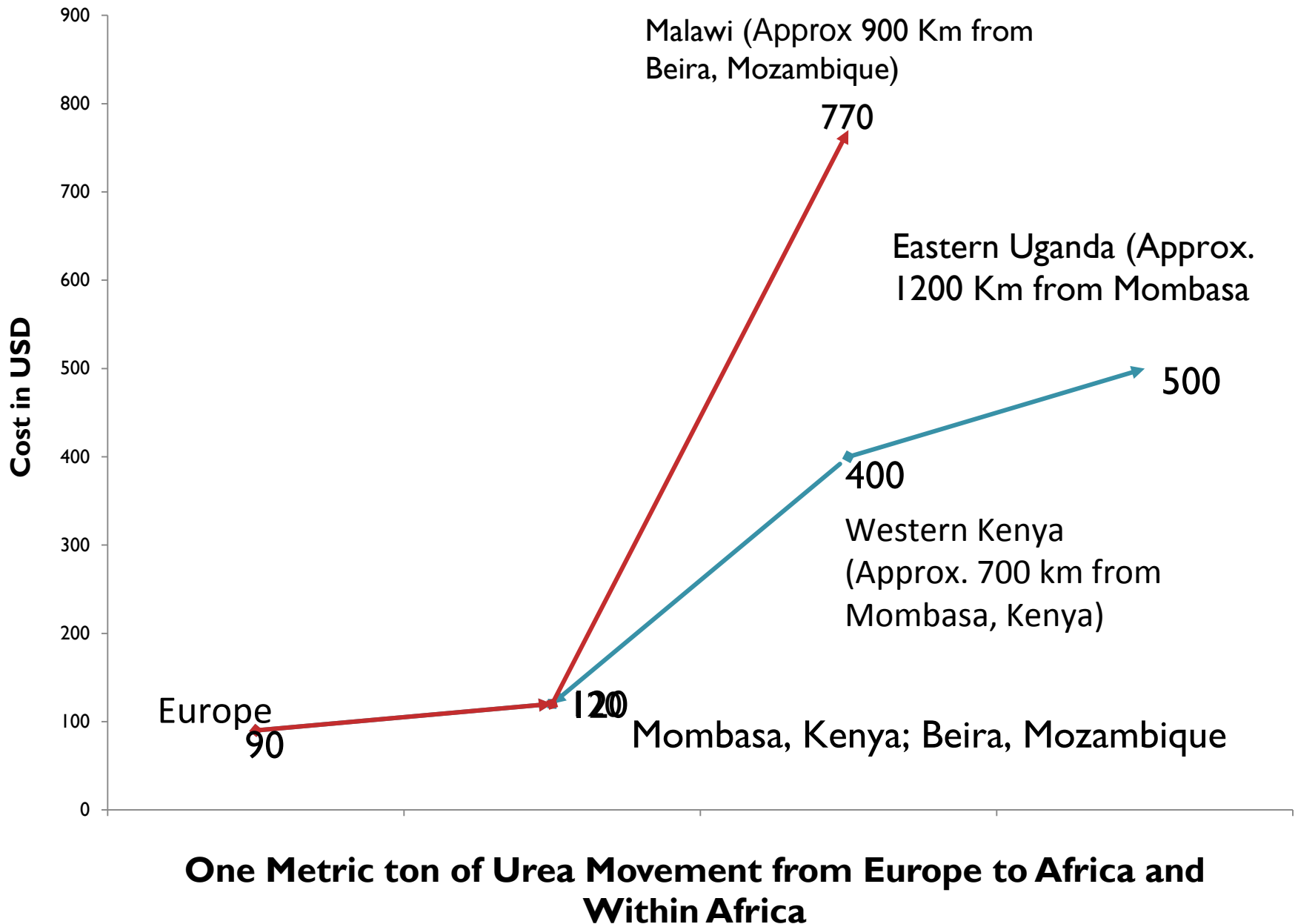
- Table 2. Some different laboratory methods used for soil analysis

<b>Soil Analysis Methods Used</b>						
<b>pH</b>	<b>Total Nitrogen</b>	<b>Available Phosphorus</b>	<b>Exchangeable Potassium</b>	<b>Carbon (SOC)</b>	<b>Calcium</b>	<b>Magnesium</b>
Soil: Water 1:1	Kjeldahl	Double acid (H <sub>2</sub> SO <sub>4</sub> + HCl)	Ammonium nitrate (1M)	Walkey black	Ammonium nitrate (1M)	Ammonium nitrate (1M)
Soil: Water 1:2.5		Olsen P	Ammonium acetate	Kjeldahl	Ammonium acetate	Ammonium acetate
Soil: KCl 1:1		Bray 1 Method	Double acid (H <sub>2</sub> SO <sub>4</sub> + HCl)		Double acid (H <sub>2</sub> SO <sub>4</sub> + HCl)	Double acid (H <sub>2</sub> SO <sub>4</sub> + HCl)
Soil: KCl 1:2.5		Bray 2 Method	Wet washing		Wet washing	Wet washing
		Mehlich				
	IR (infra-red) non- destructive	IR (infra-red) non-destructive	IR (infra-red) non- destructive	IR (infra- red) non- destructive	IR (infra- red) non- destructive	IR (infra-red) non- destructive

# **Why the low Adoption of ISFM Innovations Cont.**

## **High Fertilizer costs. This should not be the case.**

- In a 2002 spot check indicated that a metric ton of urea cost about \$90 in Europe, \$120 delivered in the Port of Mombasa, or Beira, Mozambique, \$400 in Western Kenya (700 km away from Mombasa), \$500 across the border in eastern Uganda, and \$770 in Malawi (transported from Beira)



**Source:** P. Sanchez., 2002. The Climate Change –Soil Fertility –Food Security nexux. Sustainable Food security for All by 2020.

# Government fertilizer subsidies

- 2008/2009 agricultural season, Malawi is spent: \$186 million to subsidize fertilizer and seeds for poor farmers, tripling the previous year's figure of \$62 million
- UN's Food and Agricultural Organization reward Malawi President Bingu wa Mutharika, who also serves as his country's Minister of Agriculture, with the Agricola Prize.
- 2009: , scientists from the Future Agricultures Consortium set out new recommendations to help the country maximise the benefits of fertiliser subsidies for its farmers. New proposals were presented to Kenya's Minister of Agriculture Hon. William Ruto to help in the effective, sustainable and equitable delivery of 'smart' fertiliser subsidies, drawing on lessons from Malawi



# How the subsidy was done

	Kenya	Malawi
Target crop	maize	Maize, Tobacco
Allocation criteria	None	Farm size and need
% Subsidy and ration	100% on 1 acre or for 2 (50 kg bags)	64-91% on 1 acre or for 2 (50 kg bags)
Distribution system	Vouchers	Vouchers
Other inputs	seed subsidy	Seed subsidy, Extension
Participation of Agro-dealers	<b>Encouraged</b>	Very limited (dealers affiliated importers)

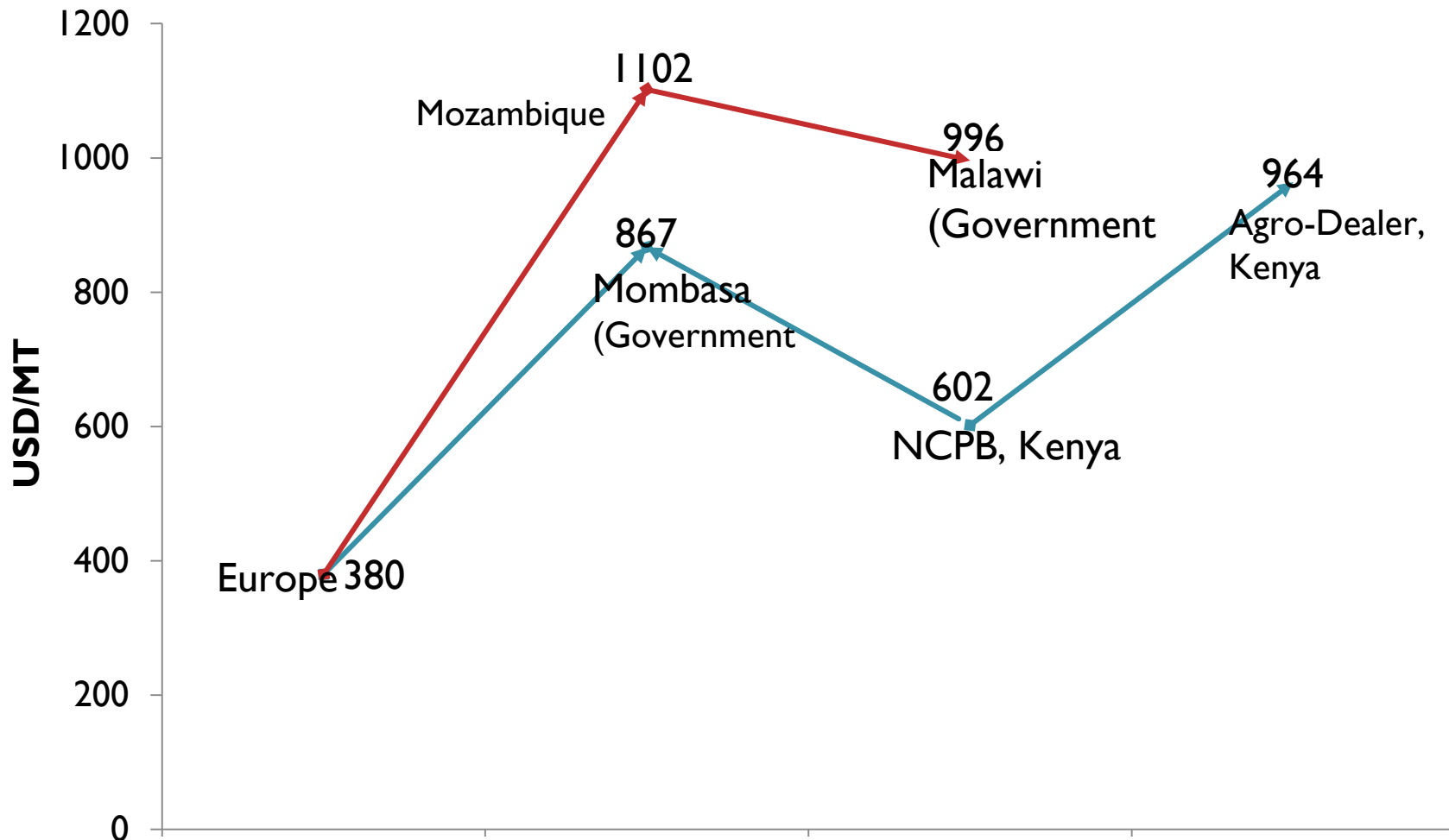
What we got:

**Malawi: 2008-2010 -24% maize production increase**

**Kenya: 2009-2010 -12% maize production increase**

# Let's assess the fertilizer prices in 2012 (10 years later)

- With government subsidies, the prices are lower at farm gate; government regulated
- Left to agro-dealers, the prices remain high



# Technology Dissemination Approaches

- Conventional technology transfer approaches have been based on the pipe-line or triangle approach of researcher – extension – farmer linkage.
- They therefore have neglected the scaling-up/out of research results to other players in the Agricultural Products Value Chains (APVC) such as inputs delivery agents, credit providers, policy formulators and input/output market agents.

# Technology Dissemination Approaches Cont.

- At the national level, there is no forum to provide technical knowledge and guidance to policy makers on the best approaches to disseminate ISFM Knowledge, Information and Technologies (KITs) or innovations as is the case with crop breeders

# ESTABLISHMENT OF KSHC

- It is on the realization of the above reasons that the Kenya Agriculture Research Institute (KARI) approached the Soil Health program of AGRA and various other stakeholders in the agriculture sector to establish the Kenya Soil Health Consortium (KSHC).
- Considering that promotion of ISFM is knowledge intensive, KARI and AGRA found it necessary to have a forum at the national level that would work to harmonize ISFM information and knowledge as well as players for effective outreach to the target farmers.

# **THE OBJECTIVES OF THE CONSORTIUM THEREFORE ARE:**

1. To improve access by smallholder farmers and other stakeholders to ISFM Knowledge, Information and technologies (KITs) or innovations
2. Enhance the generation and dissemination of ISFM KITs or innovations by harmonizing the approaches, recommendations and protocols by key institutions engaged in agricultural research
3. Advance the dissemination of ISFM innovations by developing and hosting the national ISFM database and appropriate knowledge products

# **THE FOLLOWING KEY ACTIVITIES WILL BE IMPLEMENTED:**

**Objective 1:** Improve access by smallholder farmers and other stakeholders to ISFM KITs or innovations

**Output:** One stop ISFM KITs or innovations repository for key stakeholders

## **Activities:**

- Establish one-stop ISFM KITs repository, including posting some of the materials (text, videos) online in KSHC website and popular social media networks such as YouTube
- Establish and maintain links with closely related programs and initiatives
- Establish and formalize a stakeholder forum
- Undertake synthesis study to document specific constraints to farmer adoption of ISFM practices and suggest doable recommendations for the short- and medium-term

# KEY ACTIVITIES WILL BE IMPLEMENTED Cont.

**Objective 2:** Enhance the generation and dissemination of ISFM KITs or innovations by harmonizing the approaches, recommendations and protocols by key institutions engaged in agricultural research

**Outputs:** Harmonized ISFM innovations

**Activities:**

- Build capacity of ISFM specialists in NARS and development programs to consolidate and harmonize ISFM KITs or innovations
- Harmonize ISFM innovations (approaches, recommendations and protocols)
- Publish harmonized ISFM innovations through publication of content-specific flyers and technical briefs
- Develop a bi-annual *Digest* of ISFM activities in the country



## **KEY ACTIVITIES WILL BE IMPLEMENTED Cont.**

**Objective 3:** Advance the dissemination of ISFM KITs or innovations by developing and hosting the national ISFM database and appropriate knowledge products

**Output:** Dissemination materials for end users

### **Activities:**

- Collect and compile existing ISFM knowledge products for end users
- Build capacity of ISFM innovation generators (research) and disseminators (extension) to develop harmonized knowledge products
- Prepare harmonized ISFM knowledge products
- Publish knowledge products for end-users
- Prepare KSHC proposal for 2<sup>nd</sup> phase funding

# **Methods of implementation**

The KSHC is made up of 3 units of implementation namely:

1. The secretariat
2. The steering committee
3. The stakeholders Forum

# **Methods of implementation Cont.**

**The secretariat is composed of the two coordinators and the two database officers and performs the following functions:**

1. Mans the secretariat office and does the day to day duties
2. Collects, collates, synthesizes and inventorizes all the ISFM innovations in the country
3. Presents the synthesized ISFM innovations to the steering committee for harmonization in workshops and retreats
4. Establishes a database and a website to store harmonized ISFM innovations
5. Prepare harmonized ISFM knowledge products
6. Publish knowledge products for end-users

# **Methods of implementation cont.**

**The steering committee in meetings, workshops or retreats performs the following:**

1. Guides the secretariat in the collection of ISFM innovations
2. Harmonizes the synthesized ISFM innovations by the secretariat
3. Formulate ISFM policy briefs
4. Build capacity of ISFM innovation generators (research) and disseminators (extension) to develop harmonized knowledge products
5. Scrutinizes the ISFM knowledge products developed by secretariat before publication or presentation to the Stakeholders Forum
6. Presents the harmonized ISFM innovations, knowledge products and policy briefs to the Stakeholder Forum for ratification.

# **Methods of implementation Cont.**

## **The Stakeholders Forum does the following:**

1. Ratifies all the harmonized ISFM innovations, knowledge products and policy briefs by the steering committee and the secretariat before release to the end users

# Achievements

**Since the funds were received the following have been realized:**

- The secretariat office has been secured at KARI Kabete
- Furniture, computers and stationery have been purchased
- Two database officers have been recruited
- The KSHC project website has been established awaiting linkage to the bigger KARI website
- The baseline survey should have been done and finalized but there are challenges ranging from protocols to difficulty in answering the questionnaire by some respondents
- Templates to record the results of the baseline survey and the ISFM legacy data have been developed and ready for use
- The KSHC project steering committee has been constituted

# Achievements Cont.

- The following are the institutions that have nominated individuals to form the project steering committee: KARI, MoA, KIPPRA, KU, UoN, CIAT-Africa, ACT, Farm Concern International, ASHC and IPNI
- The secretariat has collaborated with AfSIS and acquired most of the ISFM Knowledge, Information and Technologies (KITs) from KARI. It is yet to collect ISFM KITs from universities and other ISFM innovations generating institutions
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# Way forward

**The secretariat is calling for the first steering committee meeting scheduled to take place on 20<sup>th</sup> June 2013:**

**During this meeting will among other functions select the members of the *Stakeholders Forum* from the following:**

- I. NARS (KARI), CGIAR Centers (TSBF-CIAT) & Universities (KU & Egerton)
- II. Ministry of Agriculture (MoA) (AIRC, NALEP, NAAIP & ASCU)
- III. Policy makers (AIRC, ASCU & KIPRA)
- IV. NGOs (Plan International (PI) & FCI)
- V. Agro-dealers (Athi River Mining & MEA)
- VI. Credit Providers (Equity Bank Coop Bank)
- VII. Capacity building (IPNI & ASHC)
- VIII. Farmers organizations (Kenya Farmers Association)
- IX. The Media (Newspapers & TV)



# CHALLENGES

- Conflicting interests of multiple stakeholders
- Mistrusts among stakeholders may limit sharing of data and information
- Long bureaucratic procedures in some institutions to release ISFM information

THANK YOU FOR LISTENING