



# Report of the Africa RISING East and Southern Africa review and planning meeting, Arusha, Tanzania, 1-5 October 2012

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The Africa Research In Sustainable Intensification for the Next Generation (Africa RISING) program comprises three research-for-development projects supported by the United States Agency for International Development as part of the U.S. government's Feed the Future initiative.

Through action research and development partnerships, Africa RISING will create opportunities for smallholder farm households to move out of hunger and poverty through sustainably intensified farming systems that improve food, nutrition, and income security, particularly for women and children, and conserve or enhance the natural resource base.

The three projects are led by the International Institute of Tropical Agriculture (in West Africa and East and Southern Africa) and the International Livestock Research Institute (in the Ethiopian Highlands). The International Food Policy Research Institute leads an associated project on monitoring, evaluation and impact assessment.



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## List of acronyms

AVRDC	World Vegetable Centre
BMGF	Bill and Melinda Gates Foundation
CIAT	International Center for Tropical Agriculture
CIMMYT	International Centre for Wheat and Maize Improvement
CRP	CGIAR research program
DALDO	District agricultural and livestock development officer
DALY	Disability Adjusted Life Years
ESA	East and Southern Africa
FtF	Feed the Future
ICRAF	World Agroforestry Centre
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IITA	International Institute of Tropical Agriculture
ILRI	International Livestock Research Institute
M&E	Monitoring and evaluation
NARS	National agricultural research system(s)
NRM	Natural Resource Management
Q&A	Questions and answers
R4D	Research for development
RCT	Randomized control trial
RO	Research output
SI	Sustainable intensification
USAID	United States Agency for International Development

## Summary

From 1 to 5 October, the International Institute of Tropical Agriculture ([IITA](#)) organized a review and planning workshop for the East and Southern Africa Project of the Africa RISING Program with the intention to capitalize on early project activities, to produce a work plan, to form research teams and to garner feedback about the plans formulated from partners.

In the first three days the participants heard about the 11 *early win projects* that took place in the first year of the program. They drew lessons out of these projects around partnerships, cross-cutting issues, market access, agroforestry and a few other areas. They listened to the key constraints enunciated by District Agricultural Officers from Malawi, Tanzania and Zambia and formed multi-disciplinary groups to develop research questions addressing these constraints. They finally reformed as groups working on interactions between crop, soil/water and livestock to formulate research hypotheses and activities that could form a program of action for year 2.

On day 4, a field visit to Babati was organized, with stop-overs in two very diverse villages: Maramboi, a village dominated by pastoralists and Gichamedea, a village benefitting from an irrigated scheme. On the final day, ten representatives of development partner organizations came to hear the plans and comment on them.

The plans were not detailed sufficiently as they listed a number of research options from which to develop research teams. These ideas form the basis for the formulation of refined research action plans with tangible activities starting with the planting season in Tanzania in November. This report features the main discussion points, decisions, next steps and links to all presentations and documents shared during the meeting.



# Introduction and purpose

From 1 to 5 October, the International Institute of Tropical Agriculture ([IITA](#)) organized a review and planning workshop for the East & Southern Africa Project of the Africa RISING Program.

The workshop aimed to:

1. Capitalize on early win projects to inform planning for the next year(s)
2. Develop an action plan for the next year (October 2012 – September 2013)
3. Form research teams
4. Receive feedback from a wider stakeholder group about the plans formulated

The first three days gathered all research teams from the inception period, while the last two days brought together a wider set of development partners to review the plans elaborated in the first few days.

The workshop was facilitated by Ewen Le Borgne from the International Livestock Research Institute.

# Day 1 – Setting the scene

Irmgard Hoeschle-Zeledon (Africa RISING Project Coordinator for East and Southern Africa), Eric Witte (Senior International Affairs Specialist, USAID) and Ken Dashiell Deputy Director General of Partnerships and Capacity Building at the International Institute of Tropical Agriculture – IITA) opened the workshop and welcomed all participants.

After introducing participants to one another and the workshop agenda, Irmgard Hoeschle-Zeledon presented a review of the first year of the Africa RISING project in the region.

## What happened in Year 1?

In her [presentation](#), Irmgard Hoeschle-Zeledon presented a chronology of events that led to this review and planning event:

- The original brainstorming leading to the inception phase in October 2011
- The development of concept notes in November-December 2011
- The [inception workshop](#) in Dar-es-Salaam in February 2012
- The approval and implementation of 10 *early win projects* from April 2012
- The installation of the Project Office in Arusha and recruitment of staff, among whom is Mateete Bekunda, systems agronomist and the chief scientist for the region, in April 2012
- The progressive development of the research framework, culminating with the July [Ibadan workshop](#) specifically dedicated to this
- The selection of action sites (see box 1) in Tanzania, Malawi and Zambia
- The formulation of a monitoring and evaluation (M&E) plan which also culminated with a dedicated [workshop](#) in Addis Ababa, September 2012
- The establishment of a program management structure, including a project coordination committee for the region, responding the program coordination team for the whole Africa RISING program
- The development of a series of [communication tools](#) and plans that support coordination, engagement and knowledge sharing throughout the region and program, under ILRI leadership
- The design of a logical framework under leadership of the International Food Policy Research Institute (IFPRI)
- And finally the development of a program document which brings together all other elements into one comprehensive plan.

### Box 1 ESA action districts for Africa RISING

- In **Malawi**: Ntcheu and Dedza districts (where Michigan State University is active)
- In **Tanzania**: Kiteto, Kongwa, Babati and Kilombero districts
- In **Zambia**: the Eastern province

This presentation was an opportunity to remind everyone that Africa RISING is a commitment for another four years. The core of the activities for the first year was however the early win projects, which were introduced in the next session.



## Early win projects

By batches of three or four projects, all early win project proponents presented what their project was about, what insights it brought forward as well as lessons learnt and other elements to take into account. After the presentations, participants got a chance to ask additional questions. The early win projects are listed in the table below.

Table 1 Early win projects

Lead	Title	Budget (USD)
IITA	Grain Legume Value Chain Analysis	169,447
CIMMYT	Improved Post-harvest Technologies	173,000
ICRAF	Evergreen Agriculture	172,000
CIAT	Catalogue of Crop, Soil, Water Management Technologies	249,014
IITA	Mycotoxins in Maize and Cassava	170,439
CIAT	Seed Systems	170,000
ICRISAT	Seed Multiplication	270,000
CIMMYT	Intensification of Farming Systems	109,999
AfricaRice	Weed Management	170,000
AVRDC	Enhancing Vegetable Value Chain	214,969

In addition to these early win projects, a grant was given to MSU to expand on some of their work in Malawi and on which Africa RISING is going to build its activities in future.

### *Early win project lessons learned*

At the end of the first day, participants were invited, in an Open Space, to identify areas that were important to draw lessons from and capitalize upon for the broader program to come. The following areas were identified:

- Gaps to address
- Partnerships
- Marketing and market access
- Going beyond the research plot size to farms
- Cross-cutting issues
- Agroforestry

Hereby is a summary of the lessons learned<sup>1</sup>.

**Entry points:** *Farming is a business with complex interactions and opportunities*

- Farming and farm management is a business, not a development activity
- Intensification can build on existing policies, technologies etc. in place
- Many gaps remain after the early win projects phase, including:
  - Regulation policies
  - No forage seed
  - Not enough focus on nutrition
  - Not enough thinking about IPM
  - Capacity building challenges
  - Socio economic conditions remaining unclear
  - Using existing data, information in synergy is a challenge
  - Poor access to inputs, extension and markets
  - Scaling up: what should be entry points, technologies, pathways?

**Logistics and organization:** *Plan more realistically, considering disabling environment constraints, and manage adaptively*

- In project organization/management: signing agreement, contracting, disbursing funds, lack of time, selecting the right partners and not *too* many (transaction costs).
- In the work environment: Power shortages, lack of specialized equipment.

**Internal and external partnerships, awareness and engagement:** *Collaboration across CGIAR centres, NARS, and local organizations is critical*

- Not enough interaction among researchers and early win projects
- Partnerships have been established, partner inputs provided, trust established – let's celebrate successes
- Lack of awareness or access, by farmers, of improved varieties
- Awareness-creation and dissemination has not been done (enough) in early win projects
- We need communication, education and tools to engage with farmers properly
- There has been limited involvement of private sector and policy makers

**Opportunities:** *Involve, engage, work on gaps, scale up*

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<sup>1</sup> Full information is on the project wiki: [http://africa-rising.wikispaces.com/ESA\\_planning\\_review\\_2012\\_day1](http://africa-rising.wikispaces.com/ESA_planning_review_2012_day1)

- Focus: Work around farm household-level approaches
- Participatory approaches: Integration of disciplines, participatory land use planning to minimize land use conflicts and improve farm productivity, participatory evaluation of best bets.
- Engage: Need to increase interaction with agro-dealers and extension teams
- Training opportunities: Capacity building for Climate-smart Agriculture to enhance the resilience of farming systems, and for farmers on various technologies identified
- Gap-related opportunities:
  - Design and implement sustainable seed and seedling (trees and crops) supply systems / Integrated seed system research necessary
  - Work on food and feed safety standards
- Extend and scale up: Sequencing activities (e.g. for agroforestry and livestock) could be useful. Scaling up remains an issue but some areas in early win projects could be suitable for it

## Day 2 – Grappling with research

### Communication tools

The second day of the workshop was dedicated to the research activities, building upon some pillars of the program: the research framework, monitoring and evaluation plans and the selection of action sites. Before this started, Ewen Le Borgne gave a [presentation](#) indicating the communication tools (see box 2) and channels created for the program. These tools and the teams present will support research work throughout the program.

#### Box 2 Africa RISING communication tools

- Our website: [www.africa-rising.net](http://www.africa-rising.net)
- Our wiki: <http://africa-rising.wikispaces.com/>
- Our calendar: <http://africa-rising.wikispaces.com/Calendar>
- Our outputs on CG Space: <http://cgspace.cgiar.org/handle/10568/16498>
- Our presentations on Slideshare: [www.slideshare.net/africa-rising](http://www.slideshare.net/africa-rising)
- Our pictures on Flickr: [www.flickr.com/photos/africa-rising](http://www.flickr.com/photos/africa-rising)

Participants asked questions about: how to deal with information (and communication channel) overload, document management, using the tools in low-bandwidth environments and using geo-referenced pictures etc.

These concerns will be addressed by the Communication team and where applicable the Project Coordination Committee in the next few months.

### The research framework

Joseph Rusike (IITA) introduced the research framework (see figure one below) as developed so far. His [presentation](#) touched upon the context in which Africa RISING is taking place, its purpose and objectives, expected development and research outcomes, research design hypotheses (see box 3) and crucially four research outputs:

1. Situation analysis and program-wide synthesis
2. Integrated systems improvement
3. Scaling and delivery
4. Monitoring and evaluation

#### Box 2 Program research hypotheses

Africa RISING research design rests upon the following hypotheses:

1. **Adoption** – targeting demand
2. **Integration** – mutual reinforcement of whole farm productivity
3. **Trade-offs** – finding a balance between whole farm productivity and environmental sustainability
4. **Sequencing** – component technologies, practices and knowledge follow a sequence of integration
5. **Scalability** – Good targeting and evaluation of SI innovations enhances their scalability to similar strata elsewhere.

These outputs are introduced in the figure 1 below (at the centre and on the furthest layer), showing also the series of tools and methods that can be used in each part of the cycle and finally reflecting the external environment factors that are particularly relevant for the Feed the Future initiative (red arrows cutting across the core research framework activities).

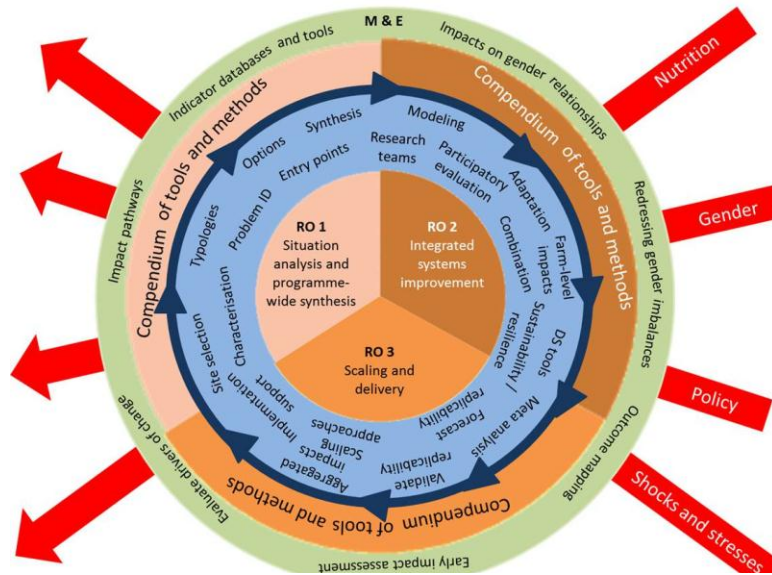


Figure 1 Africa RISING research framework

Figure 2 shows the drivers of sustainable intensification as development domains, household typologies that will be used to assess research activities and feeding into the action research sites and *research for development* platforms that will eventually lead to selecting certain SI innovations.

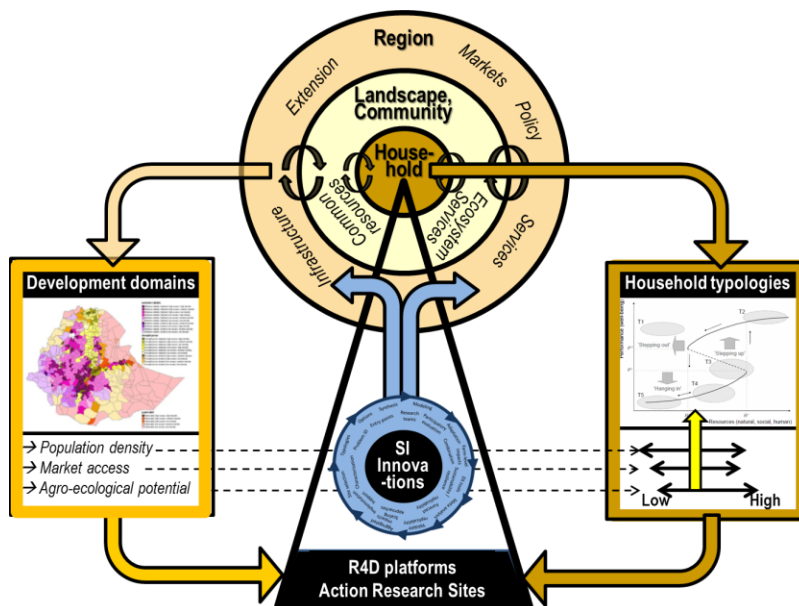


Figure 2 Africa RISING Research framework environment

The research framework presentation finally touched upon a series of methods that could be used such as participatory rural appraisal, participatory technology development and randomized control trials (RCT) – and particularly proposed some steps to roll out the RCTs across the sites.

In the Q&A, Joseph emphasized:

- The fact that we have limited budget but have to be clear that we are intervening in some villages and not in others (e.g. the control villages).
- The complexity of RCTs and the fact that other factors from the environment are integrated too.
- The idea of looking into tradeoffs between market use and household consumption, as a hypothesis around which to customize RCTs.

## Monitoring and evaluation plans

Naomie Sakana (IFPRI) presented the monitoring and evaluation plan, with a specific track for monitoring (the “process of systematic collection and analysis of data on specific”) which will be handled by implementing partners – IITA, ILRI and collaborators – and for the evaluation (the “periodic assessment of worth or significance of an activity, policy or program”) which will be led by IFPRI. M&E entails a number of components, activities and outputs, summarized in the figure 3 below.

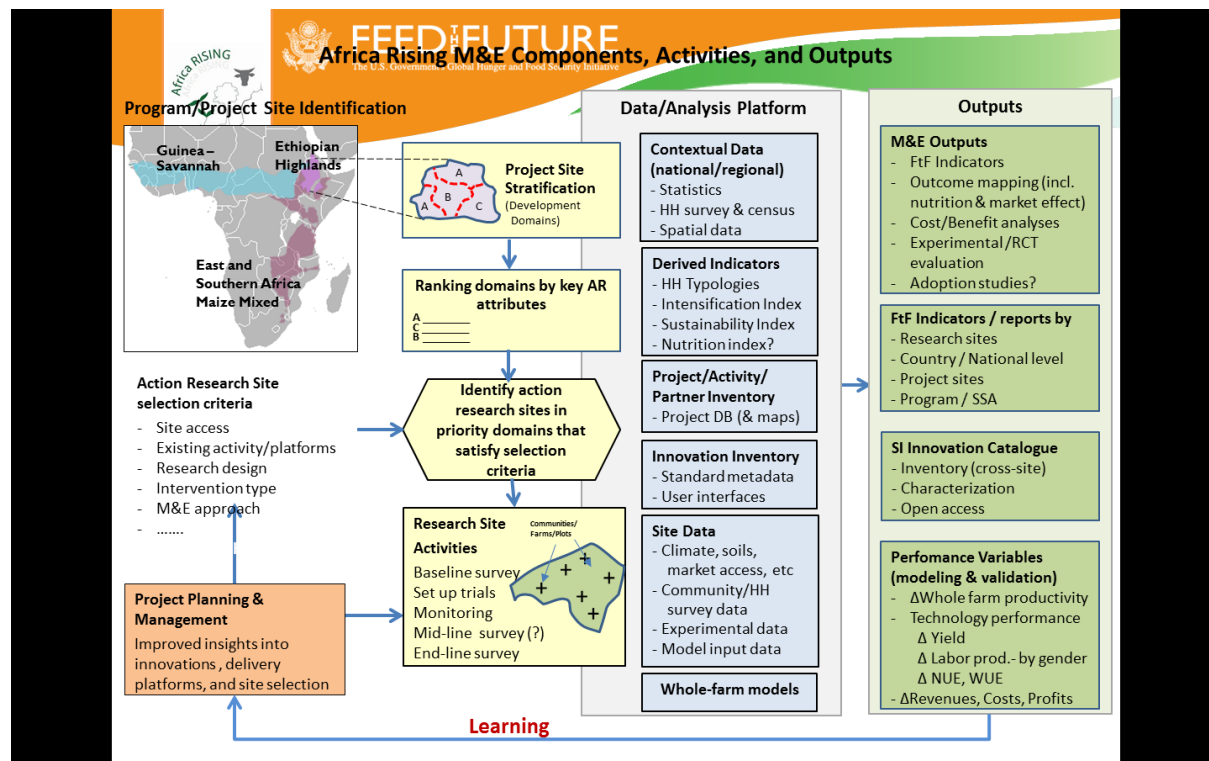


Figure 3 Africa RISING M&E plan

The presentation is available [here](#) and is complemented by another [presentation](#) about possible evaluation activities which was referred to but not presented at this workshop.

## Selecting Africa RISING action sites

Mateete Bekunda presented the final building block of the morning session. In his [presentation](#), Bekunda introduced the selection of districts in Tanzania (Babati, Kiteto, Kongwa), which was based on the development domains for sustainable intensification (agro-ecological potential, population density and market access) and the need for co-location at the [Nafaka project](#) sites in Kiteto and Kongwa (see figure 4 below). Site selection was based on the stratification work undertaken by Chris Legg on behalf of IFPRI.

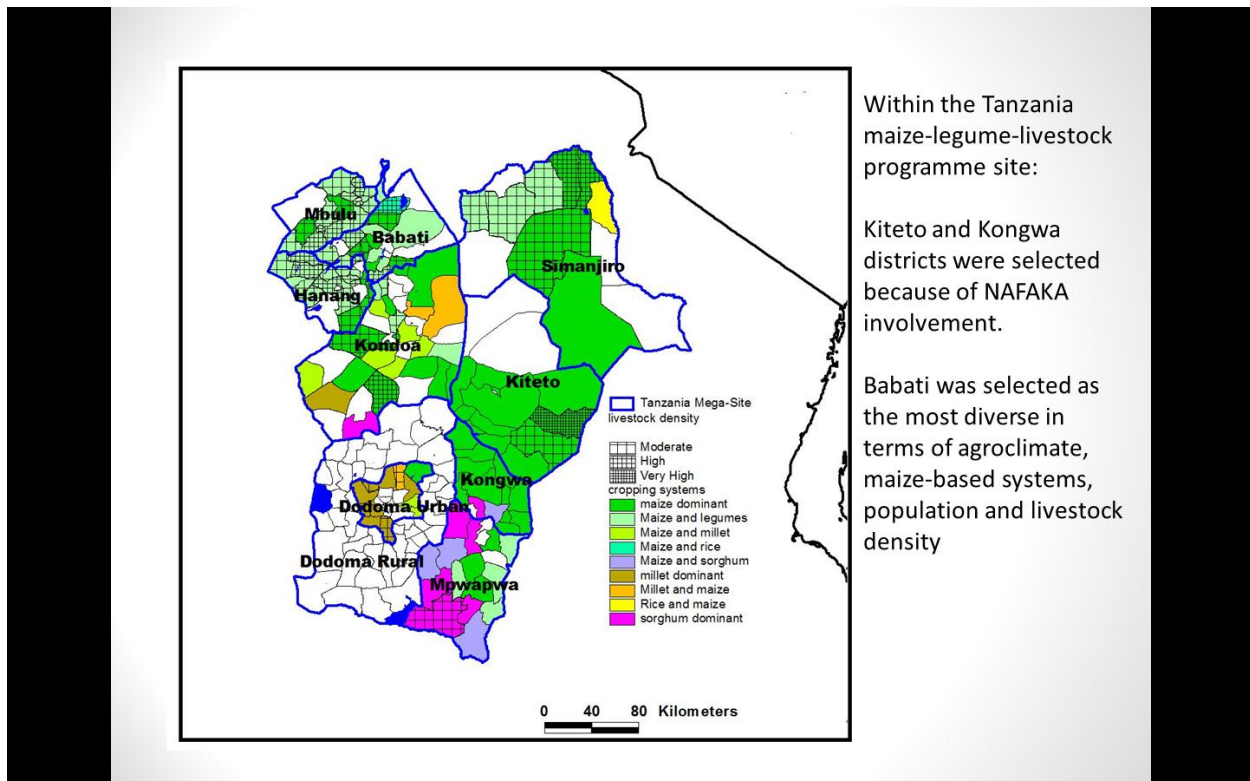


Figure 4 Africa RISING districts in Tanzania

This presentation was complemented by another very short [presentation](#) by Regis Chikowo from Michigan State University about the selection of districts in Malawi. In the Q&A, the conversation touched upon the following:

- Randomization of villages, which should be extended;
- The attribution of impact to Africa RISING versus other projects in the area – something which USAID has specific guidelines about to avoid double accounting/reporting;
- The importance of maize-based systems, even when looking at dominant sorghum/millet systems (they still include maize);
- The importance of market access among variables chosen for site selection;
- The challenges of receiving good data for some of these sites, when national systems lack that information and capacity to generate it in the first place.

## Specific challenges of intensification in East Africa

Before the next session, Lava Kumar from IITA gave a presentation about new challenges in intensification, related to the outbreak of a fungal disease (see box 4 for more information).

The outputs of the work to fight this disease might lead to the development of a strategy to mitigate pest and disease risks to intensification and intensification plans.

## Responding to demand: key challenges in the action sites in Malawi, Tanzania and Zambia

The district agricultural development officers of Malawi, Tanzania and Zambia presented one by one the major challenges they are facing in the districts selected for Africa RISING.

### *Malawi district challenges*

The [Malawi presentation](#) emphasized soil fertility, climate (rainfall) variability, inadequate resources and suggested using lead farmers, drought tolerant interventions, soil fertility

improving cropping systems and harmonization of programs and resources.

### *Tanzania district challenges*

The [Tanzania presentation](#) emphasized soil fertility, access to improved seeds, climate (rainfall) variability, pest management, weak linkages between research/extension/farmers, inadequate agro-processing/mechanization, insufficient knowledge about nutrition; and for livestock, unavailability of improved breeds, overstocking, pests and diseases, conflicts between livestock keepers and farmers; generally weak market linkages and poor transformation.

### *Zambia district challenges*

The [Zambia presentation](#) emphasized climate change, soil degradation, unavailability of improved varieties, dysfunctional markets (and awareness about them), pests and diseases, limited draft power, coordination among partners, lack of processing equipment. Ways forward suggested: productivity, nutrition focus, capacity building of NARS.

### **New challenges of intensification in East and Southern Africa**

A new maize disease ('maize lethal necrosis disease'), caused by fungi, has reached Kenya and is spreading south of the Rift Valley.

The causes of the spread of this disease are unknown to date. The blotching and necrosis is however caused by spittle bugs, possibly as a result of system diversification.

What can be done to avoid epidemics?

- Raise awareness about the threat and its potential impact
- Build capacity for rapid diagnosis
- Understand the threats in maize system areas
- Develop scoping surveys

**Box 3 New challenges of intensification in ESA**



## Developing a research agenda for Africa RISING in East and Southern Africa

### *Prioritizing challenges for Africa RISING*

Mateete Bekunda and Asamoah Larbi, respectively chief scientists for the East & Southern Africa region and for the Guinea Savannah region were tasked to draw out key trends in the priorities put forward by the three countries' District Agricultural Officers. They drew this list:

- Seed (tolerant to drought, pests and diseases, Improved varieties and diversification, Distribution systems)
- Soil fertility
- Pest, disease and weed management
- Agronomic practices (Planting periods, Spacing, IPM, Mixtures, Pre-harvest technologies / planting and weeding)
- Conservation of natural resources (Integrated Soil and water management)
- Post-harvesting (Value addition & utilization, Agro-processing equipment)
- Markets access, organizational, opportunities and niches
- Institutions (Innovation platforms to strengthen partnerships, Farmer organizations, networks (conflict management)
- Livestock (Management skills, Pastures and feeds, Health, Product processing, Breeds)
- Information and communication
- Capacity building
- Situation analysis (Research Output 1)

Key priorities from the district agricultural development officers particularly emphasized Soil fertility, pest management and seeds.

### *Boundaries and principles of research*

In order to guide the discussions, Irmgard Hoeschle-Zeledon reminded all participants (in a [presentation](#)) about important boundaries and principles of research. Boundaries define what we are not going to do while principles inform our approach.

#### **Boundaries:**

- We work on the selected sites in the three countries
- We focus on the Research Framework and its four Research Outputs
- We follow the *Feed the Future* Indicators
- We remain within budget and time frame

#### **Guiding principles:**

- Our intervention domain is the farm household
- Sustainable intensification: we aim at producing more output from the same area of land while reducing negative environmental impacts and increasing contributions to natural capital and environmental services
- We follow a stepwise approach towards SI

- We aim at targeting different household typologies which have different resources and livelihood objectives
- We constitute R4D platforms for cooperation and co-learning, including private and public sector actors needed to deliver on SI at scale
- The critical entry points we identified: (i) technologies for productivity enhancement, for natural resources management (NRM), for income generation, for knowledge management, (ii) innovations related to social and institutional arrangements , (iii) combination.

Three additional ethical principles guide our work: We develop a relationship with farmers and handle data provided by farmers anonymously; we ensure data ownership (shared by partners) and we take care of publication rights (shared by partners with acknowledgement of those who originally collected data).

### *Group work: developing research questions and activities*

On the basis of the prioritization of challenges and the research boundaries and principles, five multi-disciplinary groups were formed to develop a series of research questions, activities and approaches. Each of these groups ensured that all the main issues identified in the prioritization were included. The results of all groups are available [here](#).

All groups addressed the exercise by looking at the individual components rather than their integration, despite the multi-functional composition of the working groups. This resulted in a long 'shopping list' of research questions, ideas and approaches which cannot be easily summarized here. [See the group work results](#) for more information.

The day ended with some reflections about defining the unique comparative advantage or niche of Africa RISING, i.e. the fact that it is about demand-driven integrated systems research for sustainable intensification.

## Day 3 – Coming to action

To reframe the debates, the third day started off with three presentations about a) the research framework b) the Africa RISING niche and c) the Nafaka project and how to align Africa RISING with it.

The [presentation](#) by Bernard van Lauwe (IITA) about the research framework explained further what Joseph Rusike had presented the day before, with particular emphasis on specific aspects of each research output:

1. *Situation analysis and program-wide synthesis* focuses strongly on **characterizing and stratifying target communities** so that promising interventions are identified.
2. *Integrated systems improvement* requires identifying existing sound practices within communities and will strive for the **combination of innovations from multiple sources**.
3. *Scaling and delivery of integrated innovation* states that even well identified and integrated innovations may **need additional efforts to be scaled up and out**.
4. Monitoring and evaluation hopes to **firmly wrap the three previous research outputs** in an integrated M&E framework and approach.

He also briefly introduced the research framework of the Humid Tropics CGIAR research program (CRP), as it is very close to that of Africa RISING – as shown in figure 5 below. The same components of analysis, integration and scaling support the work.

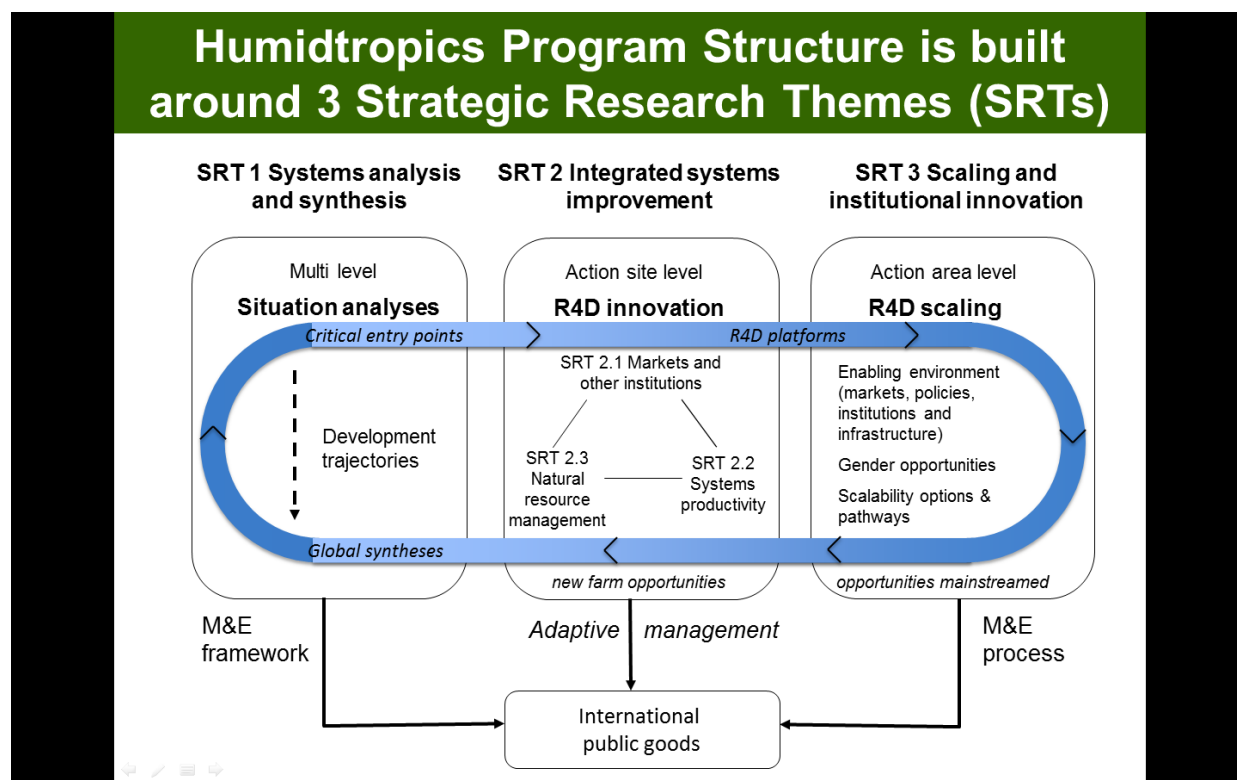


Figure 5 'Humid Tropics' CGIAR research program framework

Asamoah Larbi (IITA) followed this presentation with [one slide](#) introducing the niche of Africa RISING, i.e. the areas where crop-, livestock- and soil-focused technologies or approaches coalesce (area 7 in figure 6). Where the combination of the three cannot be achieved, at least two of these interactions should be together (areas 4, 5 and 6 in the figure).

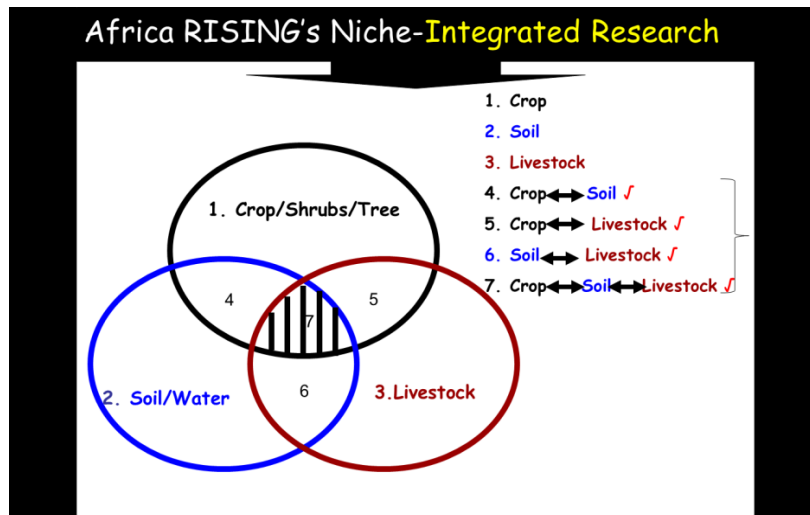


Figure 6 Africa RISING's niche

After both presentations, the Q&A session emphasized a couple of important aspects:

- In this region, due to the urgency of planting, **research output (RO) 1 and RO 2 activities have to be implemented concurrently**; we cannot wait for RO1 to be completed before starting RO2.

- The graph above does not include **markets, nutrition, gender etc. but these are all elements that support the overlapping circles** and should indeed feature in the research work plans.

## Finding a fit between Africa RISING and Nafaka

Joseph Rusike and Joe Tindwa concluded the early morning session with a [presentation](#) about the Nafaka project. Tanzania Staples Value Chain (NAFAKA) is a \$30 million USAID-funded program that integrates agricultural, gender and nutritional development approaches to improve smallholder farmers' productivity and profitability in maize and rice value chains. USAID has been asking both projects to explore cooperation options.

Joseph Rusike explored various options for cooperation through e.g. joint mother and baby trials, post-harvest work, joint work on markets, RCTs etc. Joe Tindwa reinforced the message that there was ample room for cooperation between the two projects.

## Group work: developing an action plan

After these presentations, participants split themselves across five groups: one group to work specifically on research output 1 and four groups to work on interactions: two groups on crop-soil interactions, one group on crop-livestock and soil interactions and one final group working on rice-based integrated systems. All groups worked on the same assignment and [template](#), namely to identify:

1. What combination of technologies would potentially fit in this system (bearing constraints in mind)?
2. What tangible research activities should we undertake to test if our combination fits this system? What specifically to do **NOW?** (to be in the field in November)
3. Who should be part of the research team?
4. Who could we partner with?

The groups worked for most of the day and came up with presentations. Notes from the presentations are available [here](#). The presentations themselves are linked from the sections below.

## **Research Output 1 group**

Bernard van Lauwe, Joseph Rusike, Irmgard Hoeschle-Zeledon, and Naomie Sakana were tasked to identify approaches, methods, and tools that could be used to effect research activities under Research Output 1 (RO1). RO1 entailed 8 activities around situation analysis and program-wide synthesis. Different approaches, methods, and tools were identified and summarized in table 2 below.

### *Mega-site stratification by 'development domains' within and across countries*

The group revised key drivers for testing intensification that were initially used to stratify mega-sites into development domains. Key drivers included agro-ecological potential, market access, and population density. Van Lauwe proposed to replace broad development domains with production systems. The argument was that key production systems reflect agro-ecological potential (i.e. suitability for specific crop commodities and specific crop livestock systems) and both human population density and livestock density.

Market access could be considered in terms of distance to terminal market. Major terminal markets for the research areas are: (i) Kibagwa in Kongwa district for maize (ii) Dar-es-Salaam for legumes and (iii) Dodoma for cattle. Based on agro-ecological potential, human population and livestock densities, the group identified four major production systems: (a) maize-based (b) maize-confined livestock grazing (c) Maize-free grazing and (d) mostly livestock. Market access can be captured in terms of both distance to market and production orientation at household level during baseline survey.

GIS and meta-analysis methods will be applied to secondary data from Living Standard Measurement Surveys (LSMS) to define SI dimensions along key production systems.

### *Action site selection*

Specific sites/villages will be chosen in each of key production systems for the implementation of SI interventions. Research sites should be selected to meet the criteria of treatment and control sites for rigorous evaluation whenever possible. Potential villages have already been selected for treatment. Control sites, however, are still to be validated by the implementation team in Tanzania.

GIS techniques are used to propose action research sites. The selection can only be completed by field visits to validate the results of GIS analysis.

### *Farm household typologies*

Upon completion of site selection, households will be identified to affect the activities on SI intervention implementation in the field. Given the diversity in household assets and their farming systems, a farm household typology will be developed to simplify this diversity. Data will be collected using participatory approaches, focus group discussions, and baseline surveys. Secondary data will also be gathered from LSMS 2010/2012. A participatory approach will be used to cluster households into different wealth classes. Multivariate analysis such as Principal Components and Clustering analysis will be used to refine

the standard classification scheme to functional farm household typologies. The group stressed the need to match farm households with four production systems.

### *Identification of pathway entry points*

In order to identify interventions that could be implemented in the field, it is imperative to identify researchable issues to be addressed by SI interventions. Such issues can be organized around key entry points. Once entry points have been identified, these can be linked up to create pathways for research implementation. Different methods that include Delphi, expert opinions / estimates, households and experts surveys, scoring, congruence, econometric modelling (i.e. producer and consumer surplus), DALYS (specifically for valuing other outcomes on environment, nutrition, gender, and equity), and Sustainable Livelihoods guidance Sheets will be used to identify pathways entry points. Rusike suggested initiating collaboration with Dr. Alioune Diagne from Africa Rice Centre to learn from his expertise on the use of DELPHI methods.

### *Inventorize innovations*

The implementation partners need to agree and document the suite of interventions that will be implemented and evaluated at each research site. The inventory informs the appropriate design for the baseline survey. The survey is needed to obtain baseline values of indicators the intervention might change. Different data sources will be used to gather information on potential innovations, including: (a) projects (b) CRP portfolios and (c) outcome of the Review and Planning meeting. Innovations will be categorized into four major groups: (i) on the shelves (ii) in pipelines (iii) in use by farmers and (iv) indigenous knowledge. These innovations will finally be characterized to suit farm household typologies that would be identified in each farming systems of specific development domains.

### *Ex-ante potential of options*

Ex-ante evaluation analysis will be undertaken to guide the identification of potential technologies. Analysis results will allow comparisons between predicted technology preferences with actual technology uptake among different household types. Farming system models and decision support tools will be used to determine physical input/output relationships of the potential options. Sensitivity analyses will be performed to test alternative technologies and their implications for system productivity (production domains, farms, communities) and system resilience. Results of ex-ante analyses will be validated by stakeholders from R4D platforms.

### *Priority setting and planning for integrated systems improvement*

This activity entails the identification of options that will be used to better integrate interventions into typology-specific bundles. Simple approaches for integrating SI option will be developed to suit interventions with specific systems and household types. System comparisons in-situ and participatory experimentation processes will be conducted with households of different typologies. Methods will be complemented with comparisons of perspectives between male/female farmers on technologies within household types.

### *Program-wide synthesis and co-learning at R4D platform*

The group did not elaborate on this last activity. Formal M&E process, results of hypothesis testing at program level were proposed to affect this activity. Methods such as outcome mapping will be used to measure the behavior change.

These activities were discussed in a larger group to define roles and responsibilities, timeframe for delivery, and identify funding source for their implementation. Details on roles and responsibilities, timeframe, and funding sources are presented in the table for each activity.

Table 2 Activities, tools responsibilities and expected timing for delivering Research Output 1

Activities	Approaches, methods and tools	Responsible	Funding Source	Expected timing for outputs delivery	
				Ethiopia and Guinea Savannah	ESA
Mega-site stratification by 'development domains' within and across countries	GIS, meta-analysis SI intensification dimensions along with key production systems	IFPRI et al (M&E internal Task Force; Chris Legg)	IFPRI	November 2012	
Action site selection	GIS, meta-analysis Field visits Participatory approaches Participatory experimentation among potential implementers	Implementing teams (lead by IITA and ILRI) and IFPRI et al. (M&E internal Task Force; Chris Legg, Joseph Rusike, ...)	IFPRI (50%) IITA (50%) or ILRI (50%)	November-December 2012	Mid-October
Farm household typologies Matching the farming systems with four farming production systems	Participatory approach Baseline surveys, collection of secondary data (e.g., LSMS, HIS, production data, etc.) Focus group discussion Multivariate analyses (Principal Component Analysis and Clustering)	Implementing teams (lead by IITA and ILRI) IFPRI	IFPRI	January 2013	November 2012
Aggregation of available data around the four systems					
Identification of pathway entry points	Experts opinions / estimates Households and experts surveys Scoring Congruence Econometric modeling (Producer and consumer surplus) DALYS (for valuing other	Implementing teams (lead by IITA and ILRI) IFPRI R&D platform	IFPRI <sup>i</sup>	November 2012	November 2012



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	outcomes such environment, nutrition, gender, equity) Sustainable Livelihoods guidance Sheets				
Inventorize innovations	Jump Starts across AR projects CRP portfolios Categorization of inventoried innovations (on the shelf, in pipelines, in use by farmers) Indigenous knowledge Development of simple and efficient approaches to characterize technologies in terms of their applicability for different production domains, and household types	Implementing teams (lead by IITA and ILRI) R&D platform	IFPRI and Africa RISING program	December 2012	December 2012
Ex-ante potential of options	Ex-ante analysis (models and decision support tools to guide identify potential technologies (e.g. production functions)) Comparisons of predicted technology preferences compared to actual technology uptake among different types of households Validation/confirmation of ex-ante analyses by stakeholders	IITA to lead Implementing teams (lead by IITA and ILRI) IFPRI et al. R4D platform Experts	IITA through HumidTropics	End-March 2013	December 2012
	Modeling and sensitivity testing of alternative technologies and their implications for system productivity (production domains, farm, community )and resilience	IITA and IFPRI	IITA (HumidTropics)	Continuous	Continuous
Priority setting and planning for	Development of simple approaches for integrating SI options	Implementing teams (lead by IITA and		January 2012	January 2013

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integrated systems improvement	into typology specific bundles Systems comparisons in situ Participatory experimentation processes with households of different typologies; Comparisons of perspectives male / female farmers on technologies within household types	ILRI) IFPRI et al Research Task Force		
Program-wide synthesis and co-learning at R4D platform	Formal M&E process Use results of hypothesis testing at program level Outcome mapping to measure the behavioural change	IFPRI et al Implementing teams (lead by IITA and ILRI) Research Task Force	End of project	End of project

## Crop-soil/water group 1

In its [presentation](#), this group looked at three different agro-ecologies: humid, sub-humid and semi-arid and listed crops that can be found there. They suggest the following:

- Varieties to choose: adapted varieties, grain legumes with high HI, climbing beans (high altitude).
- Temporal and spatial crop arrangements: crop rotations, intercropping, doubled-up legumes, inputs from farmer groups, introducing systems from other regions.
- Soil fertility and nutrient management: Diagnostic nutrient trials, targeted combination of nutrients for the cropping system and soil types.
- Foliar application of micronutrients.
- Responding to farm typologies and domains.
- NRM: soil and water conservation, land rehabilitation.
- IPM
- Labour-saving technologies: mechanization for intensification, post-harvest technologies)

**The combination they recommend:** Appropriate varieties + cultural practices + soil fertility management + IPM + labour saving technologies + post-harvest and safety oriented technologies.

The group also recommended a number of research activities and identified research team members and potential partners around these activities:

Table 3 Crop-soil group 1 plans

Activity	who should be part of the Research team	Potential partners
Diagnostic nutrient limitations – Participatory evaluation of technologies -	CIAT, MSU, SUA, IITA, ICRISAT, Bunda College, CIMMYT	IPNI, NARS
Establish monitoring system - diseases, crop prod, etc	IITA, ICRAF, UNZA, CIAT, MSU	IPNI, NARS
Participatory evaluation of labour saving technologies	CIMMYT, Other centres	CARMATEC
Monitor pesticide mis(usage) in vegetable gardens	IITA,	TPRI in Tanza, NARS
Evaluate mycotoxins, particularly groundnut and maize	IITA, ICRISAT	TFDA, NARS
Ex-ante analysis of different land management options	IFPRI, MSU, CIAT, ICRAF	

Table 4 Crop-soil group 1 plans (2)

Activity	who should be part of the RT	Potential partners
Facilitate the relevant regulatory body to carry out quality control of different inputs in the market of technologies		Government regulatory authorities Input suppliers
To develop information related to the use and impact of different agric inputs	CGIAR centres	NARS, NGOs, private sector
Test alternative input delivery mechanisms/ accessibility for different household typologies – private, public, NGOs, farmer organizations, etc.	CGIAR centres, MSU	Government regulatory authorities Input suppliers



## Crop-soil/water group 2

In its [presentation](#), this second group working on crop-soil/water suggested a number of technology combinations:

- Cropping system: Intercropping and rotation, (depending on agro-ecological zones with health advantages of legumes), spatial arrangements
- CA/water harvesting with intercropping/rotation with grain and legumes
- Erosion/Water management (subs-tiling, tillage, tied ridges, live hedges, etc.)
- Soil health: Fertilization with inorganics/organics (manure, compost, green manures, residue retention)
- Integration of tree shrubs on farm: *Faidherbia*, pigeon peas
- Grain legumes into the system
- Cover crops/weeds
- New varieties for food grains and legumes
- IPM
- Systems modeling for climate change and prediction

The **activities they suggested** include participatory variety selection, assessing pests/diseases, assessing adaptability and performance of new varieties, local legume production of foundation seed, water management activities, combination of organic and inorganic fertilizers, mother/baby trials, conservation agriculture (intercropping and demo plots), soil characterization in the research sites and system modeling as well as a number of cross-cutting activities (capacity building, economic evaluation of grain storage options, farmer linkages with market information, ex-ante impact assessment on income and nutrition, assessing the resilience of technologies to climate variability).

The group also looked at the expertise required to carry out this work, in total 14 different disciplines enumerated in slide 6 of this [presentation](#).

Finally the group identified partners in each of the countries including Nafaka, NARS, local authorities, local policy centers, private sector actors etc.

## Crop-livestock group

In its [presentation](#), the group emphasized the following combinations of technology:

- Dual purpose legume crops and tree/shrubs for ruminant and non-ruminant animals
- Village Level Poultry and Crop Production for Meat and Eggs
- On-farm feed formulation using locally available crops and trees/shrubs
- Pasture management for extensive systems
- Livestock-Soil-Water Interactions
  - o Manure quality and optimum application rates
  - o Interactions of manure/fertilizer and soil moisture on crop productivity
  - o Water harvesting technologies for livestock use and crop productivity

For each of these combinations the group identified various activities (which cannot be reported individually here) around characterization, participatory identification and testing of useful

species, seed production and supply model, participatory planning, access to market, capacity building...

In most activities CG centres involved would include ILRI, ICRAF, TSBF, IITA, NARS (GART, SARI, DAS, Universities such as Sokoine University and the University of Zambia etc.) and sometimes ICRISAT and CIP. Partners identified usually include local government authorities and farmer organizations or farmer organization societies, sometimes private sector companies too.

## **Rice-based systems group**

In its [presentation](#), the rice systems group focused on the major constraints they are facing in rice production and in vegetable production (e.g. weed/pest management, water, markets, harvest and post harvest, input access and soil fertility), upon which they prioritized five technologies addressing the gaps:

- Community-based seed and seedling systems: improved cv's, good seeds, healthy seedlings, promotion of good planting methods.
- Integrated crop management: timing of operations, cropping rotations, labor-saving technologies, small mechanization.
- Water management: WUE-enhancing technologies (drip irrigation, aerobic rice systems, water harvesting/conservation).
- Harvest and post-harvest handling: small mechanization, improved packaging, grading and standardization.
- Markets: warehouse receipt systems, farmer organizations to improve market access, farmer access to dedicated markets, food quality and safety standards.

From this they identified activities that could/should be undertaken, in the short-and long-term:

Table 5 Rice-based system group plans

What tangible research activities should we undertake to test if our combination fits this system? **NOW?**

1. Assess current situation – *ex-ante* impact study, incl. biophysical constraint assessment: yield gap, diagnostic and base-line surveys (**NOW**) (*AfricaRice already developed surveys for this*)
2. Establish **Multi-Stakeholder Platform (MSP)**'s for stakeholder/farmer meetings to assess resources, constraints, needs and opportunities in terms of intensification & diversification (**NOW**) ... along the value chain...
3. Community sensitization and training/awareness (**NOW**)
4. Demonstrations and evaluation of seed and seedling systems (**NOW**)
5. Community-based demonstration trials on rice-vegetable(-livestock) integrated systems (**NOW**)
6. Water management demo trials (**NOW**)
7. Mechanization: introduction, evaluation (**NOW**) (and adaptation)
8. Participatory variety evaluation (rice and vegetables) (**NOW**)
9. Introducing and evaluating improved post harvest handling practices (e.g. packaging, processing) (**NOW**)
10. Economic analyses and farmer evaluation exercises (**now**)
11. Establish farmer groups and dedicated markets (**NOW**)

The research partners identified for this work were: farmer organizations, IITA/Africa Rice/AVRDC/ILRI, DALDOs of Kilombero and Mvomero, HORTI-Tengeru, TPRI, SUA, KATRIN and Dakawa.

The group also identified collaborators (the wider partners): Nafaka, agro dealers, seed suppliers, KATC, Intermech Engineering, CAMARTEC, MAFC, SIDO, NGOs, US universities...

## **Final words**

After these presentations, Mateete Bekunda took a few minutes to thank everyone for the inputs and to explain what the inputs were. There are lots of ideas on the floor and not everything can be implemented due to resource restrictions. Who is doing what in details remains to be seen, however the ideas formulated will help generate terms of reference to develop the actual work plans.

Some of the activities proposed will be undertaken this year – with the urgency of the planting season – while others will be undertaken the subsequent years.

## Day 4 – Field visit

In order to give the project team a feel of the diversity of contexts in the Tanzania project sites, and to illustrate some of the challenges facing small-holder farmers, a one-day field trip was organized to two villages in Babati district in Manyara region.

### **Maramboi village, Minjingu**

This is a very dry part of the district. The main economic activity for community in the village is livestock keeping, mostly cattle and goats. Their main challenge is getting adequate water and pasture for the livestock.

At the time of the field visit, the pastoralists' communities were digging shallow wells to get underground water for their livestock. The water was very muddy and the exercise was very tedious.

The villagers explained that for the last ten years, they had not received any substantial rainfall. They also said some of the community members had travelled with their livestock in search of pasture and water.

### **Gichamedia village**

The second stop was at Gichamedia village to see an irrigation scheme that was started in 2004 with funds from the International Fund for Agricultural Development (IFAD) that was currently not being well managed and therefore not utilizing the resources well.

The irrigation scheme was managed by the Mkombozi Water Users Association formed by the farmers. It had 167 members and covered 178 hectares. The farmers were growing rice, maize and vegetables. The members explained that the irrigation had increased their yield of rice production from 3.5 t/ha to 7t/ha.

The farmers said their challenges included lack of modern farming implements such as weeders, rice harvesters and post-harvest processing machines, lack of market information and poor infrastructure. Pests and diseases were also spotted in some of the fields.



# Day 5 – Stakeholders’ feedback

## Introductions about the program and progress in year 1

On the final day of the workshop, Irmgard Hoeschle-Zeledon, Jerry Glover (USAID activity manager for Africa RISING) and Viktor Manyong (IITA director for East Africa) welcomed the 10 new participants that came as development partners to learn about progress made and plans elaborated.

After presentations about the Feed the Future Initiative and the Africa RISING program by Jerry Glover (presentation available [here](#)), and a presentation about the first year of Africa RISING in the region (available [here](#)), early win project activity leaders gave an ‘elevator pitch’ of maximum three minutes to present their project and newcomers were then invited to engage with them individually in a large ‘marketplace’ to ask additional questions and give feedback and suggestions. [These notes are available on the wiki.](#)

## Introducing work plans/ideas for year 2

After this, Mateete Bekunda gave a presentation about the makings of an action plan for year 2 (presentation available [here](#)), which led to some discussion (all notes available [here](#)) around the following aspects:

- **Nutritional outcomes and food safety:** nutrition-related activities are expensive and need to be factored in but cannot be a priority area. Food safety is addressed as part of market-related activities.
- **Database management:** it will be addressed by IFPRI, together with setting up an online information system that allows data capture along activities.
- **Pest management** for improved varieties: improved productivity usually goes against pest resistance.
- **Engaging with other existing projects:** This is essential and is mentioned under the action plans’ partnership arrangements. We can learn a lot from past and ongoing projects.
- We are not clearly addressing **private sector actors:** One of the linkages is via the presence of Ken Giller in the proposed science advisory committee, but we generally need to strengthen linkages with the private sector.
- Where is **gender** in all this?: We don’t have a gender strategy but could tap into the Humid Tropics CRP’s gender strategy and there are various options to link up with ongoing gender-focused training activities (mentioned in the [notes](#)).
- How was the **choice of rice and maize vs. other crops** made? In both these systems, other crops co-exist and the maize and rice value chains are priority to USAID in the region .

## Development partners' feedback

After lunch, a panel of the development partners was invited to share their reflections about what they had heard and seen during the day (full notes available [here](#)). The panel consisted of: Elizabeth Maeda (USAID Tanzania), Elizabeth Ogutu (ILRI, on secondment for the Australian International Food Security Council), Yakobo Msanga (Tanzania Ministry of Livestock), Eliawoni Mavandu (Tanzania Ministry of Agriculture) and Harry Ngoma (USAID Zambia). These partners praised the teams and emphasized the following elements:

- The **progress achieved has been good** and the project keeps being interesting
- The **sites selected are adequate**
- **Partnering with ongoing projects** (Nafaka, SIMLESA, CRP 4.3, BMGF project in Tanzania, other Feed the Future projects etc.), NARS and extension services are essential to ensure lessons are learnt and sustainability is built from the get-go
- **Feeds are important** (for their nutritional value and integration of crops and livestock)
- What might be **missing: market linkages, climate change, gender** issues.

## Reactions, steps forward and closing

Mateete Bekunda thanked the participants for their inputs and Viktor Manyong closed the workshop, emphasizing the importance of the program for all partners involved. He also shared his appreciation of seeing the action sites selected and the draft program further elaborated. He finally encouraged all partners to pull resources and brains together to achieve a lot. And the first week of the second year of Africa RISING was closed.

# Discussion points, decisions and gaps to address

## Key discussion points

- Progress in year 1
- Main lessons in year 1 (building on partnerships, entry points, logistics, opportunities)
- Research framework and the three main research outputs
- The importance of working with partners e.g. Nafaka, other Feed the Future projects.
- Challenges in the action districts identified – prioritized
- The niche of Africa RISING
- Possible combinations of technologies and activities around various interactions
- Who could be part of research teams for each set of interactions and who could be interesting partners for this work

## Key decisions

- This region works on RO 1 and RO 2 simultaneously to get ready for the planting season. RO 3 will be addressed later
- All research teams are led by CGIAR scientists but include NARS, Universities etc.
- The research teams focus on RO 1 (one team) and on various sets of interactions (crop-soil, crop-livestock, rice-based systems), following the niche of Africa RISING
- Action sites selected are good and remain the same

## Gaps to address

- Integration of cross-cutting issues in all research activities such as:
  - o Nutrition
  - o Gender
  - o Access to market
  - Responsible: all Research Teams
- M&E has to be firmed up and finalized / specified for this region; Responsible: IFPRI
- Research Output 3 needs to be further elaborated at program and project level; Responsible: Research teams, PCT
- Villages within action sites (treatment and control) need to be identified soonest; Responsible: Bekunda with Research Teams
- A data management protocol needs to be developed at soonest to agree on how to store, label, manage, share, curate data generated by research teams, including property rights
- Communication activities in support of research activities need to be refined for ESA; Responsible: Project Comms team and Project Coordinator

## Next steps

As introduced by Mateete Bekunda on Friday 5 October, the next steps are the following:

- Form research teams and identify leads for each research team (by mid October 2012)
- Identify the final set of villages for each action site in each country (by 8 November 2012)
- Develop action plans based on ideas from the workshop (by late 8 November 2012)
- Develop a research protocol (by 8 November 2012)
- Budgets per research team and overall have to be developed (by 8 November 2012)
- Finalize the M&E protocol supporting the research framework and approach in the region (by 26 October)
- Finalize the program document mentioning all activities planned for 2012, with inputs from this region too (by 31 October 2012)
- Initiate field research by 19 November 2012.

# Lessons learned from the workshop

Africa RISING is a complex program, begging the need to learn from ongoing activities. Here are some reflections about the content and process of the workshop:

- The trans-disciplinary approach to group work was appreciated and helpful to develop research ideas
- The niche of Africa RISING and its boundaries and principles have to be very clear to all people involved in developing action plans – it is important to spend time on this
- Having representatives from other regions helps cross-pollinate and build upon lessons learnt from a region to the next
- The stakeholder consultation day should be organized once clear action plans are ready to be presented, preferably a few weeks after the planning meeting (a useful lesson for year two)
- Planning in details for such a complex project/program would be easier with a smaller group or with a group of people that have followed progress and conversations throughout the project
- Africa RISING needs instruments to show progress made, decisions made and boundaries set so that not every aspect is re-explored/discussed/challenged after decisions have been made
- Working on an integrated picture from the start is the way forward to elaborate activities, rather than identifying research questions, technologies etc. (otherwise everyone starts in their default operating mode)
- Looking at planned activities for the next few years, rather than just year 2 would help prioritize key activities for each year and develop the sequencing
- Systems thinking and integration of crop/livestock/soil interactions together with cross-cutting elements (markets, institutions, capacity building, gender) is not straightforward and few people can readily elaborate working plans in such a fashion, it's a learning process for all of us

## Appendix 1 – useful links

- **Wiki notes** of the event: [http://africa-rising.wikispaces.com/ESA\\_planning\\_Oct2012\\_Agenda](http://africa-rising.wikispaces.com/ESA_planning_Oct2012_Agenda) and general event page: [http://africa-rising.wikispaces.com/ESA\\_planning\\_Oct2012](http://africa-rising.wikispaces.com/ESA_planning_Oct2012)
  
- Related **blog posts** about the event:
  - o [Looking back at the Africa RISING East and Southern Africa review and planning meeting: Interviewing Mateete Bekunda](#)
  - o [Integration, cross-learning, synergies: Keywords for the next Africa RISING phase in East and Southern Africa](#)
  - o [Preparing for the Africa RISING West Africa review and planning meeting: Interview with Asamoah Larbi](#)
  
- **Pictures** of the event: <http://www.flickr.com/photos/africa-rising/sets/72157631719553124/>

## Appendix 2 – List of participants

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<sup>i</sup> IFPRI is proposing to fund a cross-project meeting some time to help develop a strategy for a consistent characterisation of target innovations