AFRICA RISING - Enhancing partnership among Africa RISING, NAFAKA and TUBORESHE CHAKULA Programs for fast tracking delivery and scaling of agricultural technologies in Tanzania

Quarterly Progress Report (01 July 2016 – 30 September 2016)

30 September, 2016

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Contract No. MTO 069018

IITA – International Institute of Tropical Agriculture

QUARTERLY PERFORMANCE REPORT

(01 July 2016 – 30 September 2016)

<u>Thematic Implementing Partners:</u>

Agricultural Research Institute, Dakawa – Rice

AVRDC – Vegetables

CIMMYT – Maize

IITA – Postharvest and Nutrition

COVER PHOTO

A project staff demonstrates to a group of farmers how a motorized maize shelling machine works during the nane nane exhibition in Morogoro. The shelling machine is one of the postharvest technologies promoted by the Africa RISING – NAFAKA project. Photo credit: Japhet Masigo/IITA.

DISCLAIMER

CONTENTS

Acronyms and Abbreviations

Africa RISING	Africa Research in Sustainable Intensification for the Next Generation
ARI-Dakawa	Agricultural Research Institute, Dakawa
ARI-Hombolo	Agricultural Research Institute, Hombolo
AVRDC	The World Vegetable Center
CIAT	International Center for Tropical Agriculture
CIMMYT	International Maize and Wheat Improvement Center
CMSD	Cereals Marketing Systems Development (NAFAKA II) Project
CRS	Catholic Relief Services
DAICO	District Agricultural, Irrigation and Cooperatives Officer
FtF	Feed the Future
ICRAF	World Agroforestry Center
IITA	International Institute of Tropical Agriculture
IPM	Integrated Pest Management
NAFAKA	Tanzania Staples Value Chain Activity (USAID FtF Project)
PELUM	Participatory Ecological Land Use Management
PSP	Private Service Provider
QDS	Quality Declared Seed
TAHA	Tanzania Horticultural Association
TOSCI	Tanzania Official Seed Certification Institute
TUBOCHA	Tuboreshe Chakula (USAID FtF Project)
WARIDI	Water Resources Integrated Development Initiative
WorldVeg	The World Vegetable Center
ZOI	(FtF) Zone of Influence

Tables

Figures

1 EXECUTIVE SUMMARY

During the fourth quarter of Year 2, the Africa RISING-NAFAKA-TUBOCHA partnership and scaling project held its annual review and planning meeting from 4 to 5 July in Dar es Salaam during which workplans for Year 3 were developed building on achievements of Year 2. Proceedings of the meeting are at this link (http://africa-rising.wikispaces.com/AR-NAFAKA+rev%26plan_July+2016). The project team participated in nane nane agricultural exhibitions in Morogoro at which maize, rice, legumes, vegetables, and postharvest management technologies were showcased to 517 visitors (225M, 292F). Other key activities included participation in planning for the Cereals Marketing Systems Development (NAFAKA II) Project in August 2016 as well as follow-on meetings with team members (from Africa RISING and NAFAKA) in September 2016 to ensure that project activities fit in the NAFAKA II project mandate. In addition, the project hosted a USAID/Tanzania Mission joint monitoring visit between Africa RISING and PELUM in Morogoro (August 2016) and the 5th USAID M&E meeting that was held in Dodoma in September 2016. The rest of the accomplishments are briefly presented in the subsequent parts of this section.

The vegetables team trained 99 farmers (27M, 72F) in Babati, Kiteto, and Kongwa districts on seed harvesting and storage. In addition, 127 farmers (54M, 73F) were trained in Kilombero District on soil improvement practices. Further, in Iringa Rural and Kilolo districts, 74 farmers (41M and 33F) were trained on good agricultural practices (GAP), and 77 farmers (29M, 48F) on postharvest and organoleptic tests, respectively. Postharvest management training activities on maize and legumes covering proper harvesting, shelling, and storage were conducted in Kilosa and Kilolo districts for 177 lead farmers (86M, 91F).

The maize and rice teams conducted participatory yield estimation and feedback activities as part of efforts to prepare for the next year. This activity took place in all the ten project districts. Results indicate that maximum yields (about 8 t/ha) for key maize varieties promoted by the project such as H625, H614, and PAN 691 were attainable when combined with good agronomic practices in some parts of the country. For rice, maximum yields of 5.4 t/ha and 4.89 t/ha of TXD 306 and Komboka varieties were attainable under good management practices compared to 2.7 t/ha for a local variety under farmer practices. For salt tolerant varieties (SATO 1 and SATO 6), maximum yield of 7.3 t/ha was realized under good management as compared to 3.6 t/ha with no management. For calcareous soil conditions, maximum yields of the most commonly grown rice variety, TXD 360, for such conditions increased from 3.8 t/ha to 6.7 t/ha when management practices promoted by the project were implemented.

The project held a meeting with USAID M&E staff and it was agreed that a database be set up for this project separate from that of NAFAKA. However, in the reporting of data, it should be clear which data is from Africa RISING-NAFAKA sites and which is from Africa RISING only sites. This will avoid double reporting on indicators. Analysis of data from the annual outcome survey (572 households) was completed. Results indicate that the project realized all its targets for the project year, except for the indicator on number of farmers and others who have applied improved technologies which was achieved at about 79%. This was attributed to changes in leadership of the rice theme as well as

vagaries of weather which devastated some farms.

Key activities for the next quarter will include: (i) community feedback, agro-input procurement and delivery in preparation for the planting season, (ii) training of district agricultural staff (village level) and lead farmers in preparation for implementation of project activities, (iii) planting in some locations where rains begin early, and (iv) printing and distribution of technology descriptions, protocols, and training materials to be used in implementation of project activities.

2 INTRODUCTION

2.1 Project description

Africa RISING partners are involved in delivery of information and technology packages through a network of NAFAKA and other public and private sector actors aimed at contributing to the FtF goal of harmonizing regional hunger and poverty-fighting efforts in countries with chronic food insecurity and insufficient production of staple crops. Attractive interventions in this project include the introduction of improved crop varieties, dissemination of best-bet crop management packages, rehabilitation and protection of natural resources, and postharvest management.

The project focus is on three crop enterprises—maize, rice, and vegetables—with postharvest handling and nutrition as a cross-cutting theme. The key partners in the project include international agricultural research centers (IITA, CIMMYT, CIAT, ICRAF, the World Vegetable Center and one USAID-funded project, NAFAKA. These work in partnership with national agricultural research institutions (NARIs) such as Dakawa (leads the rice theme), Selian, and Kilombero Agricultural Research and Training Institute (KATRIN). Local government institutions, specifically District Agricultural, Irrigation and Cooperatives Officers (DAICOs), private sector (seed companies, millers, and processors), and NGOs are also part of the project implementers to deliver on the following objectives:

1. Introduce and promote improved and resilient varieties of food crops to farm households in a manner that complements their ongoing farm enterprises, contributes to sustainable agricultural resource management, and offers nutritional advantages and alternative market channels;
2. Disseminate best-bet agronomic management packages around the most promising new crop varieties suited to widely representative agroecological zones and market proximity;
3. Protect land and water resources and foster agricultural biodiversity through the introduction of soil and water management practices;
4. Increase food security and improve household nutrition among the most vulnerable households and their members, especially women and children, by introducing locally adapted and nutrient-rich vegetables;
5. Introduce and promote postharvest management technologies for maize, rice, legumes, and selected vegetable crops to reduce losses and bring quality up to market standards;
6. Offer and expand capacity services to members of grassroots farmers' associations, platform partners, and development institutions in the scaling process (capacity building), paying particular attention to the special opportunities available to women farmers as technical and nutritional innovators and resource managers.

2.2 Geographic zones of influence

The project is currently being implemented in five regions of Tanzania, all in the FtF's ZoI (Fig. 1). These include Dodoma, Iringa, Manyara, Mbeya, and Morogoro.

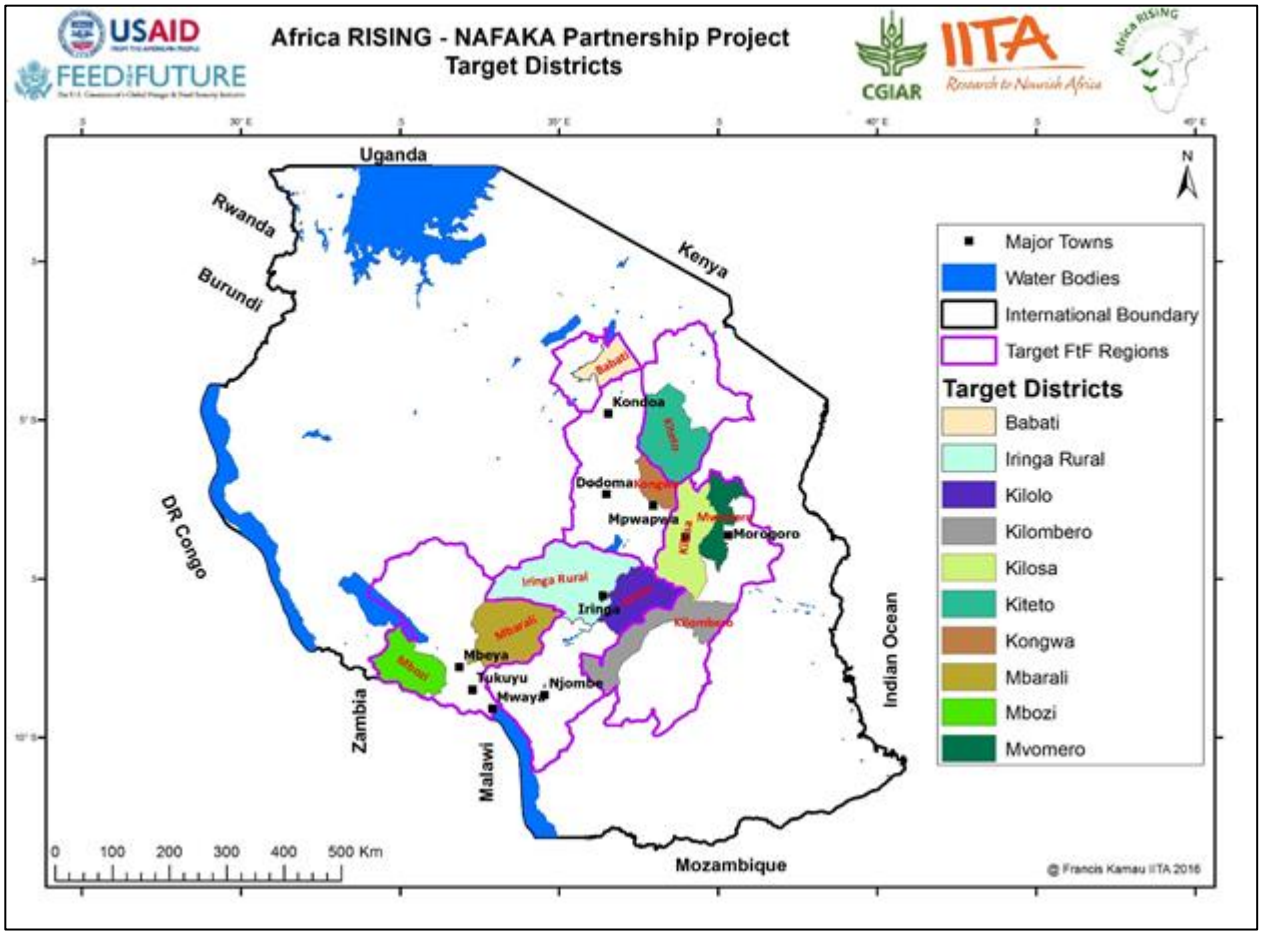

Figure 1: Project locations.

3 IMPLEMENTATION PROGRESS

3.1 Project Management

A project annual review and planning meeting was held on 4–5 July in Dar es Salaam. During the meeting, team members presented achievements and plans for the remainder of the project period. Proceedings of the meeting are available following this link (http://africa-rising.wikispaces.com/AR-NAFAKA+rev%26plan_July+2016). During the same event, a project management team meeting took place to deliberate on progress made and plans for the future.

In August, the project coordinator/technology scaling specialist participated in planning activities for the new Cereals Marketing Systems Development Project (NAFAKA II) to ensure that the NAFAKA II interventions are well aligned with the project interventions. In the same month, NAFAKA staff met with IITA staff in Dar es Salaam (Drs Baijukya and Mahuku) to discuss further plans on operationalizing quality declared seed (QDS) and aflatoxin management. Finally, in September, the maize and rice teams met to plan for activities that will lead to further scaling such as selection of additional project sites guided by geospatial and socioeconomic data as well as linking agro-input suppliers who are part of the project with rural agro-dealer networks that can further enhance technology delivery to beneficiary communities. The project also actively took part in the annual nane nane farmers' week in Tanzania, under the USAID-funded projects' (Economic Growth) banner in Morogoro, showcasing advanced technologies for maize, rice, legumes, vegetables, and postharvest management. At least 517 people (225M, 292F) visited the project stall. Other USAID-funded projects present at the exhibition included NAFAKA, Mwanzo Bora Nutrition Program, and Water Resources Integrated Development Initiative (WARIDI).

Africa RISING - NAFAKA improved rice varieties demonstration plot at the nane nane exhibition in August 2016 in Morogoro. Photo credit: Japhet Masigo/IITA.

Africa RISING - NAFAKA legumes demonstration plot at the nane nane exhibition in August 2016 in Morogoro. Photo Credit: Haroon Sseguya/IITA.

3.2 Training activities

Training activities were conducted only by the vegetables and postharvest teams. For maize and rice, harvesting had been concluded and no training activity was done for farmers, farmer leaders, or extension staff. Seed multiplication training for 99 farmers (27M, 72F) was conducted in six project villages located in Babati (Maweni), Kiteto (Kaloleni, Sunya, and Kibaya) and Kongwa (Tubugwe and Songambele) districts during July 2016. The training sessions focused on: (a) seed harvesting, (b) extraction, (c) cleaning, and (d) storage. The 99 training participants received hand-out information materials with detailed information on harvesting, extraction, drying, cleaning, and storing of seeds of all five crops that were the subject the of training (tomato, African eggplant, amaranth, African nightshade, jute mallow). With this training, farmers did not only acquire sufficient knowledge and skills to improve their vegetable production, but they were also abled to multiply the seeds received from the project and distribute seeds and seedlings to other farmers in their locality, thus serving the technology scaling purpose.

Still on vegetables, training was conducted for 127 farmers (54M, 73F) in six villages in Kilombero District (Kiberege, Lugongole, Magombero, Mahutanga, Mhelule, and Mkasu), in collaboration with Catholic Relief Services (CRS). CRS-trained private service providers (PSPs), together with the village agricultural extension officers, facilitate all training activities conducted by the project and contribute to maintenance of the demonstration plots. Farmers were trained on land preparation, vegetable spacing, and fertilizer application. Table 1 shows the different vegetable varieties that were introduced in the Kilombero communities (2 demos in each village).

Table 1: Vegetable varieties introduced in the communities in Kilombero District.

Crop name	Variety	Family
1) Tomato	Tengeru 2010	Solanaceae
2) Tomato	Tanya	Solanaceae
3) African eggplant	DB 3	Solanaceae
4) African eggplant	Tengeru white	Solanaceae
5) Amaranth	Madiira I	Amaranthaceae
6) Amaranth	Madiira II	Amaranthaceae
7) African nightshade	Nduruma	Solanaceae
8) Jute mallow	SUD 2	Malvaceae
9) Ethiopian mustard	Rungwe	Cruciferae
10) Ethiopian mustard	Arumeru	Cruciferae
11) Pumpkin	GKK 174	Cucurbitaceae

Further training activities were conducted in Iringa Rural and Kilolo districts located in Iringa Region, covering seven villages. Training sessions conducted in July 2016 covered mainly good agronomic practices (GAPs); 74 participants (41M, 33F), whereas the training sessions in August 2016 focused on postharvest handling techniques and organoleptic tests; 77 participants (29M, 48F).

i. The GAP training specifically focused on vegetable harvesting techniques, integrated pest management/pest and disease identification, and soil fertility improvement practices. All training participants received the following hand-out information materials to be used for establishing

their own home gardens: (a) record keeping books, (b) main principles of vegetable production, (c) insect pests and measures to control insects, and (d) principles for safe use of pesticides.

ii. The postharvest training was provided on improved harvesting practices and sanitary procedures that minimize food losses and reduce microbial and pest infestation. In addition, training on solar drying (rolled leafy vegetables were cut in small pieces, gathered in clothes and blanched for less than three minutes before being dried) and on improved storage and transport containers was delivered. As alternatives to the currently used wooden crates and plastic sacks, plastic crates and their advantages were demonstrated to the participants.

iii. For food preparation and organoleptic tests, principles of food safety during food preparation were discussed with the participants followed by an organoleptic test. During the organoleptic test, all vegetable crops represented in the demonstration plot were cooked using different recipes together with the farmers and the latter were encouraged to taste them and express whether they liked the recipe or not. All recipes were handed over to the farmers.

For the maize and legume postharvest component, 177 farmers in two districts—44 (21M, 23F) in Maguha village, Kilosa District and 133 (65M, 68F) in Kitowo village, Kilolo District—were introduced to, and trained on how to use the various technologies, notably maize shelling machines, collapsible drier cases, and hermetic storage bags. The equipment was left with the trainees (lead farmers) after the training to process and store their maize and legumes for food security and income generation. Village warehouse storage systems were established with the farmers in the two districts to form a platform in which other villagers/farmers will be able to see the effectiveness and efficiency of the improved postharvest technologies. It is hoped that the farmers' experiences of using the technologies will then motivate them to purchase more of them from the agro-input suppliers. The project is working with the NAFAKA project to further facilitate access to the technologies.

From the demo plot to the lunch plate. Training participants in Kilolo District had the opportunity to enjoy a lunch meal prepared from the crops grown in the demonstration plots and yes, they liked the taste of the food! Photo credit: Hassan Mndiga/WorldVeg.

Farmers in Kilosa District take part in a postharvest training session. Photo credit: Adebayo Abass/IITA.

3.3 Crop harvesting and yield data

Crops planted as part of maize and rice activities have been harvested. For maize, the performance of the varieties with GAPs in terms of mean yields for Kilolo district was as follows: H625 (8.6 t/ha), H614 (8.3 t/ha), PAN 691 (8.1 t/ha), H 628 (7.1 t/ha), and UH 6303 (7.3 t/ha). Surprisingly, yields of the local variety, *Kimkoka*, with GAPs (8.1 t/ha) was higher than that of some hybrids varieties. This was largely attributed to sporadic precipitation, some diseases, and logging (specifically for UH 6303) which some of the selected varieties could not tolerate to the same level as the local check. The team will collect additional data next year to confirm the status advantages of the improved varieties over the local variety. In addition, farmers indicated a preference even for the relatively low-yielding hybrids such as H 628 maize due to their taste and marketability (sold for roasting as green maize in urban locations), confirming that high yields is not the only criterion used by farmers to select improved varieties for adoption.

In Babati District, except for Mamseed, all the varieties responded well to fertilizer application and other agricultural practices, with yields ranging between 2.6 t/ha and 3.6 t/ha (Fig. 2). Highest maize grain yields were observed with Meru HB 513, Meru HB 515, and SC 627. Response to fertilizer for these three varieties was high, varying from 75% to 135% over the control. Aminata seeds (NATA H 104) had a moderate response to fertilizers and increased yields by 53%. Data for Kilosa District showed a similar trend.

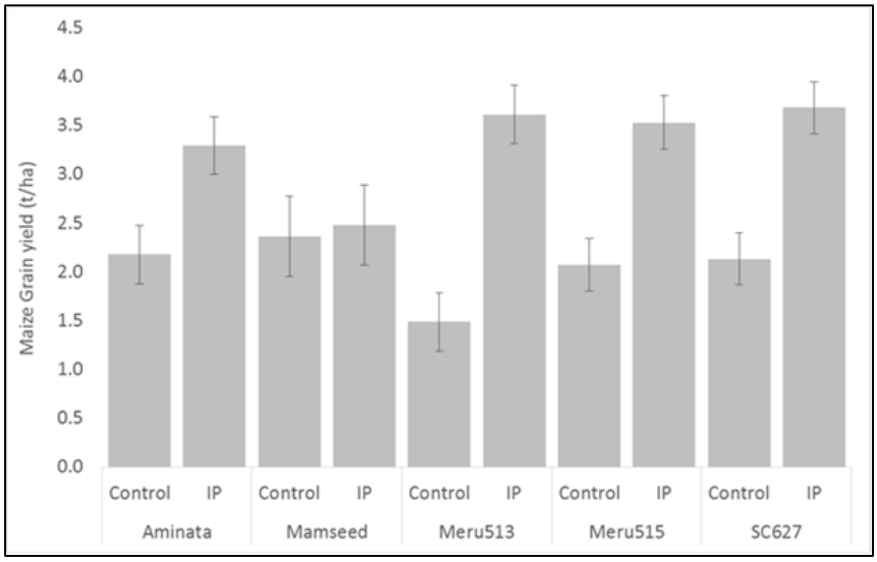

Figure 2: Maize grain yield in Babati District for 2016/17 season.

In Kongwa and Kiteto districts where the project has been operational for two years, yield data was collected from farmers' fields—those who planted the varieties promoted by the project. Typical yield from farmers' fields is less than 1 t/ha (about 0.5 t/ha). The mean grain yield obtained from farmers' fields from both districts is depicted in Figures 3 and 4. The yields ranged from 0.5 t/ha for NATA K6Q to 4.7 t/ha for Meru HB 515. The yields for all varieties were below potential because of low rainfall and prolonged drought which were experienced in both districts. In fact, most farmers who planted local varieties had almost no harvest.

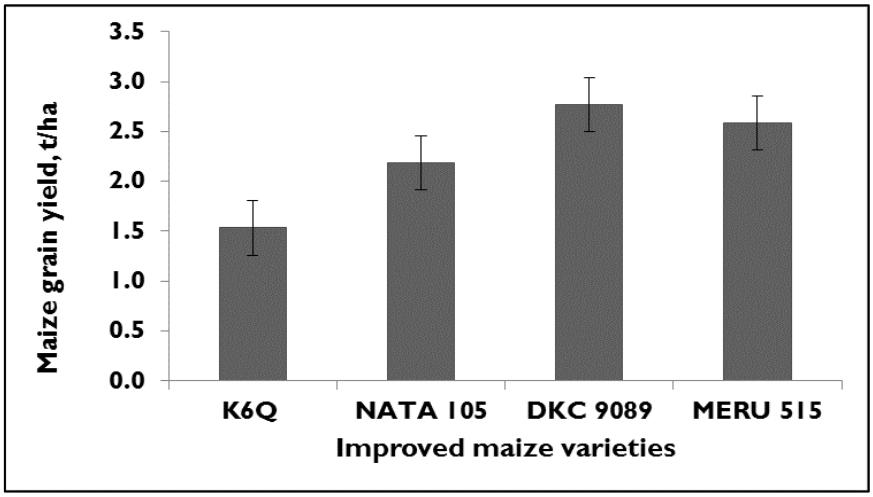

Figure 3: Mean maize grain yield from farmers' fields in Kiteto district during 2015/2016 cropping season.

Farmers in Ngipa village, Kiteto District who planted local varieties lost nearly their entire crop due to drought conditions (left photo) whereas those who planted resistant varieties promoted by the project in the same locality (right photo) expect some harvest. Photo credit: Haroon Sseguya/IITA.

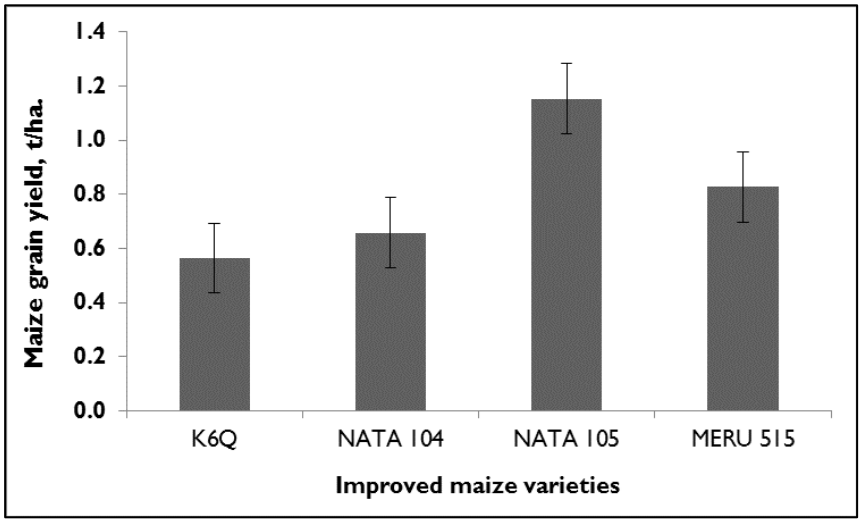

Figure 4: Mean maize grain yield from farmers' fields in Kongwa District during 2015/2016 cropping season.

For rice, yields of two rice varieties promoted under VarFer (TXD 360 and Komboka) were higher when the recommended fertilizer dose (basal and top-dressing) was applied compared to farmers' practices (Fig. 5). Common farmers' practices included one or more of the following (i) planting local, unimproved, low-yielding varieties, (ii) use of fertilizers that supplied only nitrogen or phosphorus but no potassium, (iii) untimely application of fertilizers, e.g., only late top-dressing with nitrogen-supplying fertilizers without basal fertilizers, and (iv) application of lower or higher doses of fertilizer than required. The recommended practices include planting the improved high-yielding varieties combined with good fertilizer application practices that include timely application of NPK- fertilizer as basal (pre-planting) followed by top-dressing application of N-supplying fertilizer at the recommended rates of 80:40:40 per hectare. (P and K were applied as a basal rate of 87 kg/ha of DAP and 98 kg/ha of MOP, respectively, and N as top dressing at 174 kg/ha of urea split equally into two). It is also worth noting that the improved varieties yielded more than the local ones even under farmers' practices compared to the local variety.

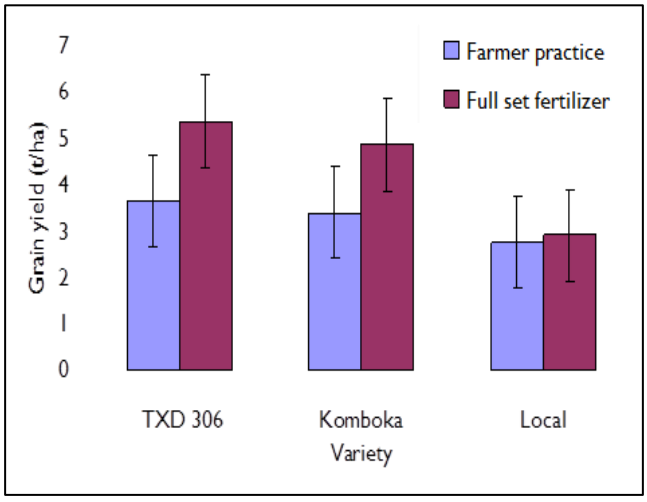

Figure 5: Rice grain yield of two improved and one local rice varieties under two fertilizer management regimes across all project sites, excluding salt affected and calcaric sites.

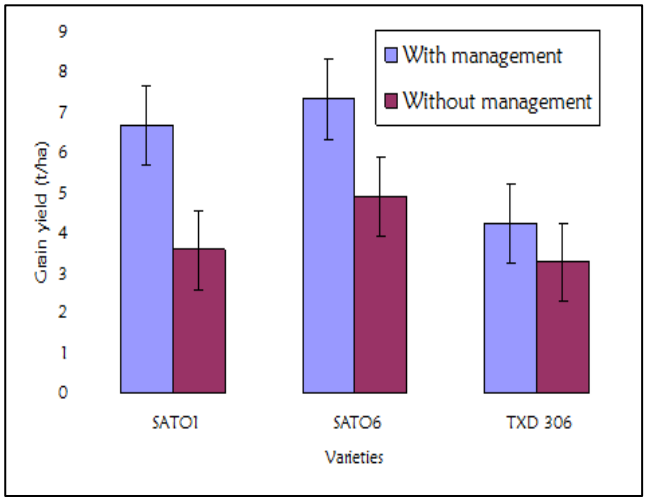

Figure 6: Rice grain yield of two salt-tolerant and a non-tolerant rice varieties under two salt-managements across sites.

For management of salt-affected soils, yields of two salt-tolerant varieties (SATO 1 and SATO 6) and a non-tolerant (check) TXD 306 were determined after having been planted in demonstration plots where salt-management amendments (farm yard manure (FYM) and gypsum) were applied, and also in non-treated plots. The yields of all rice varieties were higher in plots where gypsum and FYM were applied (i.e., with management) compared to non-treated (i.e., without management) (Figure 6). The highest yield (7.3 t/ha) was recorded for SATO 6 followed by SATO 1 (6.7 t/ha). The lowest yield was 4.2 t/ha obtained from TXD 306. Moreover, even without salt-management SATO 1 and SATO 6 varieties performed better than TXD 306 which had an overall lowest yield of 3.3 t/ha.

For management of calcaric soils we demonstrated the response of the most commonly grown rice variety (TXD 306) to different management practices: (i) no fertilizer, (ii) FYM, (iii) urea, and (iv) a combination of di-ammonium phosphate (DAP), sulphate of ammonia (SA), and FYM. Yield data indicate that grain yields of 6.7 t/ha were recorded in plots where a combination of DAP, SA, and FYM was applied, followed by 6.2 t/ha and 5.2 t/ha in plots where urea and FYM were applied, respectively. The lowest grain yield (3.8 t/ha) was obtained in plots where no fertilizer was applied (Figure 7).

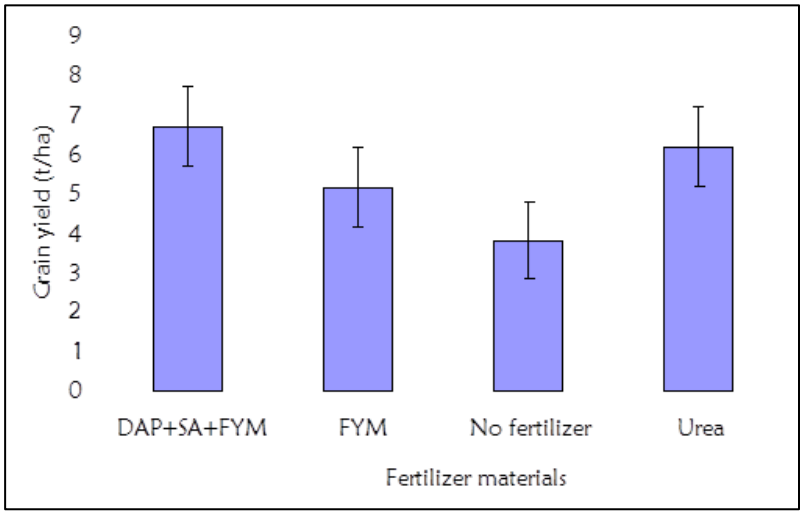

Figure 7: Rice grain yield of TXD 306 variety after application of different fertilizer types on a calcaric soil at Dakawa irrigation scheme, Mvomero District.

Following these impressive results on the varieties and practices promoted by the project, training materials will be updated and used in further technology scaling activities.

4 ACHIEVEMENTS AND RESULTS

General

i. The annual review and planning meeting was held with all teams in attendance (35 participants). Teams have successfully developed and submitted their workplans and budgets for the third project year.

ii. Project teams have held at least four meetings to ensure that project activities align with the mandate of NAFAKA II, which is a new project.

iii. Over 500 stakeholders visited the project stall at the nane nane agricultural exhibition in Morogoro, further providing an opportunity to taking promising agricultural technologies to scale.

Maize

Yield data for varieties and good agricultural practices have been generated for the various project locations, indicating that the project results have an advantage over the local varieties and practices.

Rice

Yield data for different varieties and agronomic practices has been generated, indicating, in all cases (varieties/fertilizers, salt-tolerant varieties, and management of calcaric soils), that the information and technologies promoted by the project increase yields.

Vegetables

i. In total, 99 farmers (27 male and 72 female) in Babati, Kiteto, and Kongwa districts were trained on how to harvest, extract, clean, and store seeds to produce all vegetable accessions given by WorldVeg during the trainings. All training participants received a seedkit that can be used as foundation seed for further seed multiplication activities.

ii. In Kilombero District, 127 farmers (73 female and 54 male) from six villages were trained on soil improvement practices, transplanting, spacing, and fertilization. Six demonstration plots with each having 22 beds for 11 different vegetable accessions were established.

iii. In Iringa Rural and Kilolo districts, 74 farmers (33 female and 41 male) were trained on good agricultural practices and 77 farmers (48 female and 29 male) were participating in postharvest training activities and organoleptic tests.

iv. 250 recipe leaflets and record keeping books were distributed during trainings in Iringa Rural and Kilolo districts. Farmers further received handouts summarizing major principles and practices of vegetable production, insect and pest control, and safe use of pesticides.

Postharvest

i. 177 farmers (86 male and 91female) in Kilosa District (Morogoro Region) and Kilolo District (Iringa Region) were introduced to three categories of postharvest technologies which will then form a basis for increased efforts for encouraging large-scale adoption of these technologies through the NAFAKA II project.

5 PROBLEMS AND CHALLENGES

Postharvest

- The generally low maize harvest caused by the drought conditions limited activities of the postharvest team thereby limiting participation of farmers in key postharvest management activities such as community crop storage aimed at ensuring hands-on participation in use of the improved postharvest handling technologies.

Vegetables

- Both training packages on GAP and postharvest in Iringa Region were conducted during maize harvest. Due to this, the participation of, in particular, male farmers was quite low. However, still on average 15 farmers per village were trained.
- Due to low temperatures in the Kilolo District, the growth rate of the two amaranth varieties, the two African eggplant varieties, and jute mallow was slower compared to those grown the other project villages. Despite the slower growth rate, all five varieties were still able to produce remarkable yields.

6 PLANNED ACTIVITIES FOR YEAR 3 (FIRST QUARTER)

6.1 General

i. Visit to districts to jointly plan with DAICOs and village leadership regarding implementation of project activities

ii. Training village extension staff and lead farmers to participate in project activities

iii. Multiplication and distribution of training materials

iv. Introducing aflatoxin management activities in the project areas

v. Setting up and M&E system for the project

Specific activities for each team include:

6.2 Maize team

i. Team planning meetings to be held in Arusha in October 2016

ii. Feedback meetings to communities do be conducted during the months of October and November 2016

iii. Procurement and delivery of seed and fertilizers to project sites be done in November 2016

iv. Establishing demos and training activities for village extension staff and lead farmers during the entire first quarter

v. Finalization of writing of extension materials in October 2016.

6.3 Rice team

i. Finalization of training materials in October 2016

ii. Community sensitization and planning meetings in October and November 2016

iii. Procurement and delivery of seed and fertilizers to project sites in November 2016

iv. Establishing demos and training activities for village extension staff and lead farmers during the entire quarter

6.4 Vegetables team

i. Conducting GAP and postharvest training together with the organoleptic test in Kilombero District

ii. Selection of new pilot villages in Iringa Region and Mbarali District (Mbeya Region). Pilot villages in Iringa will be selected together with the Tanzania Horticultural Association (TAHA) representative for Iringa Region, who will contribute to the training implementation. In Mbeya Region, the project team will work together with CRS.

iii. Together with the Africa RISING mother project, the vegetable team will test small-scale screen house technologies at the World Vegetable Center campus in Arusha and in five villages

located in Babati District. The small-scale screen houses will be scaled out as a new technology in 2017.

6.5 Postharvest management and nutrition

i. Refinement of a scaling strategy for the technologies with NAFAKA by November 2016

ii. Facilitation and backstopping community service providers to train households on nutrition and dietary practices throughout the quarter.

7 SPECIAL ISSUES

In August 2016, the project hosted seven staff of the USAID/Tanzania Mission (Economic Growth team) as part of a joint monitoring activity. The purpose was for projects to share their progress on-site with Mission staff but also for projects implemented in the same locality to learn from each other. On this occasion, two organizations were visited: IITA and Participatory Ecological Land Use Management (PELUM). The joint team (USAID staff, Africa RISING, and PELUM) visited project sites in Morogoro Region and interacted with project beneficiaries and local government staff and leaders. Visits to each of the sites (Mfumbwe village in Morogoro Rural District for PELUM and Dihinda Village in Mvomero District for Africa RISING) took one day each. On the third day, a debriefing activity to discuss the process, results, and key considerations for better visits in future was held.

In September, the project hosted the 5th Quarterly M&E meeting for USAID-funded FtF interventions in Tanzania. The meeting was held at the Dodoma regional library with ARI Hombolo, the lead implementer for project activities in Dodoma Region, playing a key role in organizing the event. Thirty participants (15M, 15F) mainly M&E staff from 18 organizations/institutions across Tanzania attended the meeting. As part of the field activities, participants visited Sagara A village in Kongwa District, and interacted with project beneficiaries regarding their experiences of participating in the project.

USAID Tanzania Mission staff held meetings with project staff (left) and project beneficiaries (right) during a joint mointoring visit to projects implementation sites for Africa RISING – NAFAKA project and PELUM in Morogoro Region in August 2016. Photo credit: Gloriana Ndibalema/IITA.

Project partners involved various group activities and discussions during the 5th USAID monitoring and evaluation meeting the Africa RISING – NAFAKA project in Dodoma. Photo credit: Gloriana Ndibalema/IITA.

8 CROSS-CUTTING ISSUES

8.1 Gender integration

One of the key aspects focused on by the project is ensuring participation by all community members (men, women, and youth). There were no critical issues on gender integration in this quarter. Female participation was in most of the villages equal to or even higher than male participation. One reason for this observation was the maize harvest, which engages most of the male farmers and which took place at the same time when some of the trainings were conducted. Variety selection activities for maize and rice were an attraction for males, females, as well as youth.

8.2 Behavior change communication

For the vegetables team, during the project interventions in Kilombero, Iringa Rural, and Kilolo districts, the project team noticed the following changes in farmers' behavior:

i. Farmers, in particular in the pilot villages in Kilolo District, increased their vegetable production area and started to sell vegetables to the local market. Farmers especially appreciated the African nightshade variety 'Nduruma' as it is fast growing and was very well received by the local consumers. Farmers further mentioned that the new vegetable crops (in particular African nightshade, jute mallow, and Ethiopian mustard) increased the diversity of vegetable crops growing in the local home gardens. It was also mentioned that the project intervention led to a higher vegetable consumption in some of the farmer households.

ii. In Iringa Rural District, farmers from the pilot villages appreciated especially the new Ethiopian mustard variety 'Arumeru'. They liked the taste and already predicted after the organoleptic tests that this variety will lead to an increased vegetable consumption in local households.

iii. Farmers started to adopt ridging in their home gardens to improve the efficiency of water use, which is a great technical improvement.

8.3 Environmental compliance and natural resource management

The project plans to develop a Pesticide Evaluation Report and Safe Use Action Plan (PERSUAP) with the NAFAKA project in the course of the year 2016. In maize-based activities, GAPs for sustainable use of soil and water such as tied ridges in semiarid locations as well as legumes and judicious use of fertilizers have been a strong focus of the training and demonstration activities. Using high yielding and more resistant crop varieties combined with improved production practices such as appropriate spacing to increase seedling and plant health, organic fertilizers, as well as other IPM practices may reduce the application of pesticides and chemical fertilizer which would help reduce environmental pollution. The rice component has likewise focused efforts on management of salt-affected and calcaric soils as a key strategy for promoting proven innovations that will lead to their successful and sustainable use.

8.4 Monitoring and evaluation

As part of the agenda for the joint monitoring visit in Morogoro, the USAID M&E staff discussed with the project team matters relating to avoidance of double counting from sites where both Africa RISING and NAFAKA projects serve the same beneficiaries. From the meeting, it was resolved that a database be set up for this project, separate from that of NAFAKA. In addition, when reporting the data, it should be clear which data is from Africa RISING-NAFAKA sites and which is from Africa RISING only sites. This will avoid double counting on indicators.

All project indicator performance achievements are indicated in Annex 1. In general, the project realized the set targets, except for the indicator on number of farmers and others who have applied improved technologies which was achieved at about 79%. This was attributed to changes in leadership of the rice theme, from AfricaRice to ARI Dakawa, with different technologies being considered for promotion by ARI Dakawa from those suggested earlier by AfricaRice. This meant that the rice theme was contributing to Year 1 targets in Year 2 of the project. The other constraint was vagaries of weather which devastated some farms, in the process affecting technology adoption.

9 ANNEXES

Annex 1: Performance against PMP indicators.

Indicator	**FY 2016 target**	**FY 2016 achievement**			**FY 2016 % achieved**	**% Female**	**% Male**
		With NAFAKA	*Africa RISING only*	Total			
4.5.2(2) Number of hectares under improved technologies or management practices as a result of USG assistance	9400	10 852.4	2100.56	12 952.96	137.8%	N/A	N/A
4.5.2(5) Number of farmers and others who have applied new technologies or management practices as a result of USG assistance	13 120	6627	3718	10 345	78.9%	39.1%	60.9%
4.5.2 (7) Number of individuals who have received USG supported short-term agricultural sector productivity or food security training	10 925	7412	3893	11 305	103.5%	49.3%	51.7%
4.5.2 (11) Number of food security private enterprises (for profit), producers organizations, water users associations, women's groups, trade and business associations, and community-based organizations (CBOs) receiving USG assistance	122	118	35	153	125.4%	N/A	N/A

4.5.2 (13) Number of rural households benefiting directly from USG interventions	7200			7583	105.3%	45.7%	54.3%
Custom indicator: Number of beneficiaries with home gardens or alternate crops as a proxy for access to nutritious foods and income	200	-	1643	1643	8.215%	47.7%	52.3%

Annex 2: Success stories

- **Success story 1:** From a training on postharvest loss management to a booming maize shelling business
- **Success story2:** Improved agricultural technologies tipping the scales of gender equity in a rural Tanzanian community
- **Success story 3:** Zipporah's redemption

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