



3ie TW4/1010: 'IMPROVING FOOD SECURITY THROUGH THE INTRODUCTION OF NEW SEED VARIETIES: WHICH MODALITIES ARE MOST COST-EFFECTIVE IN PROMOTING USE OF NEW SEED VARIETIES?'

PROCEEDINGS OF A STAKEHOLDERS' BREAKFAST MEETING

ON

EXPLORING STRATEGIES FOR INCREASING UPTAKE OF IMPROVED SEED IN UGANDA.

Kampala, Serena Hotel, Addis Room.

7.00 a.m. to 11.30 a.m.

April 30, 2015

BACKGROUND

Three institutions namely, Pearl Seed Limited (U), Tegemeo Institute, a policy research Institute under the Division of Research and Extension of Egerton University in Kenya, and the College of Agriculture and Environmental Sciences (CAES) in Makerere University, have set out to undertake an evaluative experiment aimed at providing evidence on the effectiveness of strategies used in promoting new seed varieties. Pearl Seed Limited is a private seed company based in Uganda, whilst Makerere University and Tegemeo Institute contribute to better policy formulation in Uganda, Kenya and the region, by conducting research that informs development agencies about the effectiveness of interventions that are aimed at enhancing food security, creating wealth and sustaining the environment. Through outreach, these institutions engage with stakeholders in the public, private sector and the civil society, about possible policy and investment options that can promote uptake of technologies, enhance household incomes, food security, and agricultural and rural development in the region.

The three Institutions recently held a stakeholders' meeting in Kampala to launch the evaluative study and disseminate early findings from a very recent baseline survey on the “**Farmers Awareness, Perceptions and Opinions on Improved Seed, and their Adoption Behavior: Exploring strategies for increasing uptake of improved seed in Uganda**”. The study, and the meeting were motivated by renewed efforts to up-scale the use of improved seed in the region, and the increased number of new varieties which need to be passed on to farmers for their benefit.

The event brought together representatives from the private and public institutions working in the seed industry including: seed companies, regional government, political leaders, agricultural sector ministries, research institutions and development agencies.

OPENING SESSION

Welcoming Remarks: The meeting was held in Kampala Uganda on April 30, 2015 at the Kampala Serena Hotel, Addis room from 7 to 11.30 am. The participants came from various backgrounds and institutions. These included a member of the Ugandan parliament and chair of the agriculture committee Mr. Mathias Kasamba, CYMMIT, CGIAR representative, lecturers from Makerere University, several District Agricultural Officers (DAO), senior agricultural

advisor for SNV, plant breeders from Pearl seed, chief of party for the FtF_USAID Uganda, Executive Secretary Uganda seed Association, Ministry of Agriculture, National Seed Certification Services officials, Journalist from the New Vision Media, Mercy Corps Director, officials from AGRA office in Kenya, and chief of party ACDI VOCA, and staff from Tegemeo Institute among others.

The event was opened by the Director of Pearl Seed Company Mr. Richard Masagazi. In his opening remarks he noted the central participation of Tegemeo Institute, Pearl Seed Limited (PSL), 3ie, Makerere University College of Agricultural and Environmental Sciences and Wageningen University (WUR) in the project. He said the project was borne out of the realization that most breeders use different methodologies for promotion and despite the many efforts to promote use of new improved seeds, the uptake was still low. There was also need to link with agro dealers as the sources of improved seeds for the farmers. This particular study is looking at the efficiency of different promotion methods in affecting adoption of PH5052 and NABE15 maize and bean varieties respectively. The project is based in the districts of Hoima, Masindi, Iganga and Tororo Districts. He said the varieties have desired characteristics especially drought tolerance and improved yields. He requested for active participation to improve on the study and farmer uptake of improved technology in general.

Opening Remarks, Tegemeo Institute: On behalf of the Director Tegemeo Institute, Dr. Mercy Kamau thanked the participants for their presence and time. She proceeded to give a brief introduction of Tegemeo Institute and its work highlighting the purpose for which it was established. She gave the objectives of the Institute and specifically explained its focus. Among the activities the Institute is engaged in include evidence based research, outreach to policy makers and stakeholders, monitoring and evaluation and capacity building through formal interactions. The institute has a rich database of rural and urban household surveys, panel survey spanning over ten years, government commissioned studies and others including a baseline study for AGRA. This particular study is a partnership between the Institute, 3ie, Pearl Seed, Wageningen University and Makerere University. She mentioned that the major objective of the study was to explore strategies for increasing the uptake of improved seed in Uganda. On behalf of the Director Tegemeo, she expressed gratitude to the participants for having made it for the meeting despite the short notice.

Opening Remarks, AGRA: The Director of Strategy, Monitoring and Evaluation division at AGRA, Dr. David Ameyaw emphasized the role of AGRA in promoting a green revolution in Africa. He gave a brief background of AGRA noting that it has been in operation for about nine years and provided funding for investment in staple crop production to a tune of USD 0.5 billion. He highlighted the different partnerships between AGRA and other international organizations such as IFAD, Bill and Melinda Gates Foundation among others. The Director applauded Pearl Seeds Limited as one of the seed companies enhancing technology dissemination and adoption in the rural areas. He said AGRA focuses on market access, marketing policies, and works with farmer organizations to achieve its objectives. He mentioned that the demand for evidence based policy necessitated rigorous policy evaluations through 18 programs across Africa.

Dr. Ameyaw applauded Pearl Seeds as one of the seed companies enhancing technology dissemination and adoption in the rural areas. He however noted that among the many breeders requesting funding from AGRA, all have different promotion methodologies such that there is need to find out which interventions worked best for seed promotion. This could solve the problem of smallholder farmers' poor uptake of improved technologies despite the huge amounts of investment and funding that have been provided to African governments. He noted that Africa has different farming systems and policy development should be specific to the different farming systems if rural livelihoods are to be improved. He stressed the need for policy development that makes transformation of livelihoods a reality.

Opening Remarks, NaCCRI: The Head of the Cereals Program, NaCCRI, Dr. Godfrey Asea said the study was aimed at improving the uptake of improved seed. It is aimed at translating output to inputs and outcomes in farmer based investment in best management practices. Specifically, he noted that despite the wide release of over 60 and 30 varieties of maize and beans respectively; the use of improved seed remained low at only 40% or less. He wondered whether the problem is scaling up versus market access or its awareness versus constraints. He noted that the average yield for maize is 2.5 MT/Ha against a potential of 10MT/Ha. He emphasized that there is need to equate genetic gain to productivity gain. He said he was looking upon the results of the study to help the key stakeholders in addressing some of the challenges in the adoption of improved technologies by smallholder farmers. He emphasized that one of way of improving the standard of living for the rural communities is to bridge the gap between farmer yields and research yields.

PLENARY SESSION

Presentation by Mr. Franco Alia, Operations Manager, Pearl Seeds Limited: **Project Intervention, Promotion Strategy, Areas & Activities.**

He started with an introduction of Pearl Seeds (U) Limited highlighting the vision, mission and objectives of the company and then gave the varieties of focus under the promotion campaign which included PH5052 for maize and NABE 15 for beans. Mr. Alia mentioned other crops varieties which their company is currently working on for dissemination to the farmers. The company's strategy involves production which entails the production of seeds of various crops varieties under supervision from Ministry of Agriculture, distribution through established distribution centers who supply seed to agro-dealers and inputs shops, direct sales & upgrading agro dealers and promotional which includes the use of radio adverts, radio talk-shows, fliers, leaflets, etc.

For this particular study, the company was to develop maize demonstration plots in the four study districts two in each of the randomly selected sub-counties in the treatment study districts. He however said they had to adjust the random selection because some areas fell in cutoff places. Thus, a control group and treatment group was obtained. The control areas were where there was no demonstration sites while treatment areas had demonstration sites. For each demonstration plot a demonstration kits that was provided Pear Seeds which included the seeds, fertilizer, insecticides and sign posts.

A number of challenges were encountered in the process. These included difficulty of identifying the recommended sites of 0.5 – 1.0 acre in key strategic areas, late rains and dry spells that disrupted the planting time and striga, *Striga asiatica/hermonthica* attacks in Eastern Uganda among others. It was interesting to note that P5052 resisted the attack. He highlighted the importance of establishing demonstration sites amongst farmers in their villages. This increases the incomes at village level and also encourages farmers to identify with the improved technology. He appreciated the various stakeholders (farmers, researchers and development partners) for their active participation in the project.

Presentation by Dr. Mercy Kamau, Senior Research Fellow, Tegemeo Institute: **Objectives of the Study, Methods & Expected Outputs.** Dr. Kamau presented the objectives, methods and expected outputs of the study. She explained that the motivation of the project was the low

agricultural productivity in Africa resulting from limited use and/or poor access to improved technologies. Despite the availability of improved germ-plasm, use of improved varieties remained low among African farmers. How can farmers benefit from the use of improved varieties? Which modalities are cost-effective in promoting the use of improved seeds? She mentioned that the interest in demo plots as a promotion methodology was because they are expensive but common hence the need to evaluate their effectiveness. The study will also look at effect of sustained promotion, the effect of opinion leaders and how demo plots combined with field-days influence adoption. She explained the analytical approach that will involve the use of mixed methods both qualitative and quantitative. She stressed that the difference between a control and treatment is the absence of demonstration sites in the control study areas and elaborated on the data collection exercise as involving household surveys at base, mid and end lines. The data was collected at household level and individual levels for the qualitative. She then concluded by illustrating the project timelines.

Presentation by Dr. Bagamba Fredrick, Senior Lecturer, Makerere University: **Study Results.** Dr. Bagamba's presentation focused on the preliminary findings of the analysis from the baseline data. For the important indicators expected to influence adoption there was no significant difference between the control and treatment households which means the sampling and hence the baseline is sound. In terms of awareness of improved seed, 90% and 83% of the males and females respectively were aware. However, even though the farmers were aware of improved seed, those planting them were few, and majority planted local maize and bean varieties. The study also looked at the various seed information sources used by farmers. Most of the farmers accessed information from their fellow farmers as opposed to other information sources. The study findings will be important in informing policy on the adoption and dissemination of improved technologies to farmers of both gender.

Honourable Guest Remarks - Hon. Mathias Kasamba: He started his speech by saying that 'the betrayal of the African course is by the elites' because despite the highly educated elites in Africa the African communities still lived in deprivation. He challenged the elites to lead by example especially by practicing farming better in their communities. A good example is the Food Security mobilization campaign a partnership between the government and the members of parliament become partners with the private sector, researchers and the farmers. He pointed that

research needs to engage politicians in dissemination and outreach because the politicians have mobilization power and are important game changers in the use of improved technologies and in up-scaling since they have the peoples' (farmers') mandate.

He said that if uptake of improved technologies among African farmers is to be realized, emphasis ought to be placed on awareness and mindset change giving an example of the problem of food deficits despite having good climatic conditions necessary for growth of such crops like rice. He requested seed companies and breeders to improve affordability, accessibility, palatability and marketability of improved varieties. He stressed the importance of using opinion leaders such as religious leaders and cultural leaders in enhancing the uptake of improved technologies and underscored the importance locating demonstration sites at congregation points like churches and mosques where many people mainly farmers meet. He commended the networking of relationships between researchers, opinion leaders and farmers.

DISCUSSION/WAY FORWARD

Question and Answer:

Below are questions comments and suggestions by participants as a way of improving the study and the responses by the panel of presenters.

Q-1. The participant sought clarification from Mr. Franco on the challenge of farmers asking for a cash to host the demonstration plots.

A-1. On cash benefit for hosting the demonstration plot, Mr. Franco replied that although this was not a common occurrence, it was rectified with the use of district extension staff. He added that in future the use of opinion leaders and religious institutions such as churches for demo sites in addition to the extension staff would help in establishment of the sites.

Q-2. The study methodology is not clear on how change in income resulting from improved productivity will be tracked. How it will monitor improvements from the investment.

A-2. On tracking yield, income and investment and identifying/noting the most significant changes, Dr. Kamau promised that the study can incorporate such significant changes.

Q-3. The finding that 90 and 83 percent of male and female farmers were aware about improved seed while 89 percent knew the benefits while 58 percent were using retained seed raises questions on how we can improve uptake. Perhaps the use of opinion leaders would be instrumental.

A-3. On awareness, most households were aware about improved varieties but when it came to planting, they planted local varieties. This is one area the study plans to explore through risk assessment and other studies. The study has PhD students who would do further investigation on such issues.

Q-4. District Agricultural Officer for Iganga, on climate change recalled that Mr. Franco had expressed a challenge of late planting due to drought. He felt that perhaps this provides an opportunity not to rely on rains for planting because the new variety showed resilience to drought. He noted too that the new maize variety seemed resistant to the striga weed.

A-4. Mr. Franco observed that in Uganda, agricultural activities are still heavily dependent on rain fed conditions so the issue of late planting due to drought was unavoidable.

Q-5. For Dr. Bagamba... How was the study addressing other issues like market access and affordability that affect adoption of improved varieties?

A-5. On seed affordability and accessibility the research team emphasized that their study shall ascertain how agro-dealers influence farmers' uptake of technologies.

Q-6. Government and especially the MAAIF should be central in up scaling and promoting technology to farmers but extension officers are not represented in the meeting.

A-6. About involving the Agricultural Ministry in project activities, Dr. Bagamba noted that representatives from MAAIF were invited for the meeting and indeed they were present. Also, the project works with district agricultural officers implying that the MAAIF structure was followed. On the involvement of extension the process is being implemented by Pearl Seeds Limited and evaluation done by the research team but along the way extension staff in all districts and study areas including MAAIF are involved.

Q-7. What are the maize and beans variety attributes of the chosen varieties that make them special. *See A-17.*

Q-8. About the design, the participant suggested that the study should have compared two varieties one established and one new and add an upcoming maize growing area as opposed to the predominant maize areas used in the study.

A-8. On the issue of comparing a local variety with an improved one the research team added that the study is not a research project and can only focus on a limited area of the whole issue of adoption in this case promotional strategies mainly the demonstration plots and field days and

media. Additionally, farmers know their local varieties and can compare them well with new varieties.

Q-9. On the sensitivity of female (gender) to the market may be because females/women tend to influence men to buy seed. Participant suggested including the drivers of willingness to pay for improved seed.

A-9. On the willingness to pay for seed the research team indicated there is a possibility of including it in the study.

Q-10. One participant asked if the project considered gender in terms of hosting the demonstration sites, whether sensitivity of gender in ownership and management of the demonstration plots. *See A-1*

Q-11. On dissemination methods, why was the study tracking only two while there could be many factors affecting adoption?

A-11. On other determinants affecting adoption the research team explained that although the main components under study were demo plots and media promotion the analysis will include other factors known to influence adoption such as education and income. Additionally the study will collaborate findings with other similar studies tracking other factors influencing adoption.

Q-12. How far has Pearl Seeds Limited taken advantage of the 'Operation Wealth Creation'?

A-12. On the issue of taking advantage of the 'operation wealth creation' Mr. Franco said that the company has a three year contract with government to supply seeds.

Q-13. A participant lamented that he once bought seeds from Pearl seeds which did well but the company did not follow up with him. He suggested that Pearl Seeds should track how its new seed varieties perform.

A-13. On tracking customers to monitor performance of seeds, he said the company was working on it and their website is also being redesigned to receive feedback from the users of their products.

Q-14. One participant suggested that it would have enriched the study if a local variety was compared with an improved variety.

A-14. On the issue of comparing a local variety with an improved one the research team added that the study is not a research project and can only focus on a limited area of the whole issue of adoption in this case promotional strategies mainly the demonstration plots and field days and

media. Additionally, farmers know their local varieties and can compare them well with new varieties.

Q-15. Another participant asked whether soil analysis was done before fertilizer was applied in the demonstration plots because applying wrong fertilizers could negatively affect performance of the trial varieties.

A-15. Soil analysis before fertilizer application was not done as confirmed by Pear seed mainly because it is expensive. He said that they are relying on MAAIF which is going to set up a center at Kawanda research institute. Thus, they relied on background information and perceptions to apply fertilizer in the plots.

Q-16. How will the study differentiate the impact of one intervention vis-a-vis all other interventions that were being implemented simultaneously in the study areas?

A-16. The research team responded that on study design, this was mainly due to budgetary limitations but adding more permutations would make the study complex thereby masking the effect of the subject variables which would work against the study objectives.

Q-17. Are the varieties only suitable for low lands or what their recommended AEZ is because it was not clear from the presentations?

A-17. On of resistance of PH5052 to striga, Dr. Asea said that the variety was specifically developed for drought tolerance not striga resistance but it was not unusual for varieties to exhibit other desirable traits other than those targeted by research. He promised that the variety will be tested along with other varieties that are being developed for striga resistance.

Q-18. The same for the level of tolerance of the varieties, what does being drought tolerant mean, what are the thresholds for moisture and temperature? *See A-17 above.*

Q-19. A participant expressed concern that if a farmer devotes an acre for the demonstration site and the seed company takes all the harvest then farmers would be unwilling to host the demo site.

A-19. He clarified that the size of the demo plots was 0.5 acres, and the farmer only provided land and labor while the company did the rest. After measurements, the harvest belongs to the farmer.

Q-20. A participant wanted to know why some farmers planted retained hybrids and yet hybrids are not to be replanted (according to researchers). If replanted, the hybrid would evolve into seed of different traits some of which lead to susceptibility of the plant while others might be good. In

case the hybrid became susceptible we should encourage farmers to inform other farmers so as to stop planting retained hybrids. *See Dr. Asea's Closing Remarks.*

Q-21. The affordability and accessibility of the seed has impact on the cost of seed and hence adoption given that farmers travel long distances to access the seed.

A-21. On seed affordability and accessibility the research team emphasized that their study shall ascertain how agro-dealers influence farmers' uptake of technologies.

Q-22. What has MAAIF done to ensure that seed available on the market is of recommended quality since farmers do not produce seed but purchase it from agro-dealers? He expressed concern that if seed available on the market is of poor quality then farmers would continue to use local seed. The participant also wanted to know whether MAAIF has any strategies to ensure availability of high quality seed on the market. *See Mrs. Divine Nakedde's closing remarks.*

Q-23. In Kenya, AGMARC has been involved in capacity building of distribution and promotion where demonstration plots and field days are set in agro-dealers' farms. This model also works in setting up a credit facility for farmers to access the seed through the agro dealers.

A-23. Although the AGMARK model was commendable, the research team felt that because the study focuses on farmers who are far from urban centers or agro-dealers, it might not work for this study. The demos were established in villages to bring the experience closer to the farmers.

EVENT CLOSING REMARKS:

In addition to the above responses to questions, guests representing key institutions related to seed and its development were requested to respond to issues touching on their fields of work and also make their closing remarks.

Dr. Nkalubo highlighted the issue of palatability in the development of the improved varieties noting that it is considered by breeders. He added that farmer attributes in varietal development are always considered by breeders and that palatability tests are carried out in participation with consumers before releasing a variety. He explained that there are two drought tolerance mechanisms namely physiological, the plant uses less water for functions and time to maturity where the crop matures before drought stress for instance NABE15 matures early and requires less water to grow such that in the event of high rainfall the farmer suffers loss as the crop will not perform well.

Dr. Asea further expounded that if a maize variety is drought tolerant it can withstand two weeks of drought after flowering. He clarified that a variety is considered local by farmers if it has been replanted so many times. He expressed the need to unpack the “local varieties” so as to separate from retained hybrids. He further added that although uptake of seed is related to the grain market, the drivers of grain demand are not well known despite having an impact on the demand for improved seed.

Dr. Ameyaw in his closing remarks, gave statistics on AGRA funded activities including supporting 1,405 agro-dealers, development of 59 varieties 54 of them already commercialized, supporting 6 seed companies in Uganda, supporting production of 64,000 MT of seed that has benefitted about 1.9 million people. He echoed the researchers’ response that the study is looking at the most cost-effective strategies and if too many permutations were to be included then the study would lose track of its major objective. He added that the study is part of a larger study that was commissioned in different parts of Africa and that it would help in guiding investment towards the most effective way to promote adoption of improved technologies. He concluded that such investment would be made more prudently with availability of evidence on which way is most effective in enhancing adoption and productivity of the technologies for improved livelihoods.

Final Closing Remarks. Mrs. Nakedde from the **Department of Crop Inspection and Certification, MAAIF**, explained the role of the department as responsible for overseeing release of new crop varieties in Uganda. She is personally charged with verifying new varieties. In 2013 MAAIF had 7 maize and 6 bean varieties respectively for release. However, the Commissioner for Crop Inspection and the Director General for National Agricultural Research Organization (NARO) were worried that despite the release of many new varieties farmers continued to use local varieties. Thus a decision was made to release only three varieties per year. Consequently, much debate ensued in the ministry on what factors limited farmers’ adoption of newly released varieties hence need for more research to answer these questions. She therefore applauded the study for its timeliness. She hoped the findings will help the ministry and other stakeholders in finding a solution to the challenge of limited uptake of improved technologies by farmers.

On quality control that had been raised earlier in the discussion session, she noted that quality control is everybody’s responsibility adding that over time the ministry officials have found fake seed in licensed seed company bags during their routine checks and wondered why the companies

are not securing their packaging material. However MAAIF has come up with a tamper proof label with computer generated code. She added that seed companies shall be given codes commensurate with their capacity. Any seed without the label shall be confiscated and culprits prosecuted in accordance with the new law.

ANNEXES - attachments

1. LIST OF PARTICIPANTS
2. PROGRAMME
3. WORKSHOP REPORT
4. PRESS RELEASE
5. PICTURES
6. POWERPOINT PRESENTATIONS