

# **An Evaluation of three Seed Fairs in the Southern Highlands of Tanzania from Different Stakeholders Perspectives**



**Report by  
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### Acknowledgement

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## **Background**

A survey was carried out during three seed fairs in the Southern Highlands of Tanzania from August –September 2005. The seed fairs were organised by the FAO regional *Gender, Biodiversity and Local Knowledge Systems to Strengthen Agriculture and Rural Development* in Southern Africa project (the LinkS project) whose goal is to enhance rural people's food security and promote sustainable management of agro-biodiversity by strengthening the capacity of institutions in the agricultural sector to apply approaches that recognize men and women farmer's knowledge in their programmes and policies.

The survey was organised by the *Improving farmers and others stakeholders access to quality information and products for pre and post harvest maize systems management in the Southern Highlands of Tanzania* project which was funded by the DFID Crop Post Harvest Programme with the goal that national and international crop-post harvest innovation systems respond more effectively to the needs of the poor.

The intention of the survey was to learn more about how farmers and other stakeholders learn and how they would like to learn in order to help improve service provision of information, training and products to these different stakeholder groups. The findings of this survey will be combined with findings from the project's work with a range of stakeholder groups evaluating: leaflets; radio programmes; product demand from stockists; varieties; where and how farmers' actual practices were learnt.

## **Method**

The two seed fairs which the survey team visited were in Shinji village, Ileje district, Mbeya region and Malinzanga village, Iringa district, Iringa region respectively, the national agricultural show (NANENANE) in Mbeya municipality in the Southern Highlands of Tanzania was also surveyed. The villages where the seed fairs were organised were those where the LinkS project had been implemented in the Southern Highlands Zone. Both villages are in the rift valley with rather dry conditions with maize-bean farming systems. The survey was conducted for one day at each of the two villages and for four days at the national agricultural show in Mbeya.

Participants attending the seed fairs and the agricultural show were stopped randomly and asked three questions:

1. What were the three most IMPORTANT things you learnt or got at the seed fair?
2. What did you want to learn about?
3. How could the seed fair have been improved?

The responses to these questions were recorded and later entered into a spreadsheet. They were then grouped into ten categories based on their general themes (i.e. crops, seed, networking and technology transfer, pest and disease management, soil fertility management, post harvest, processing, irrigation, livestock and other). The numbers of responses in each of these categories are included as bar charts in the following pages. The detailed statements for the most popular categories are given in the appendices.

The respondents came from the following stakeholder groups:

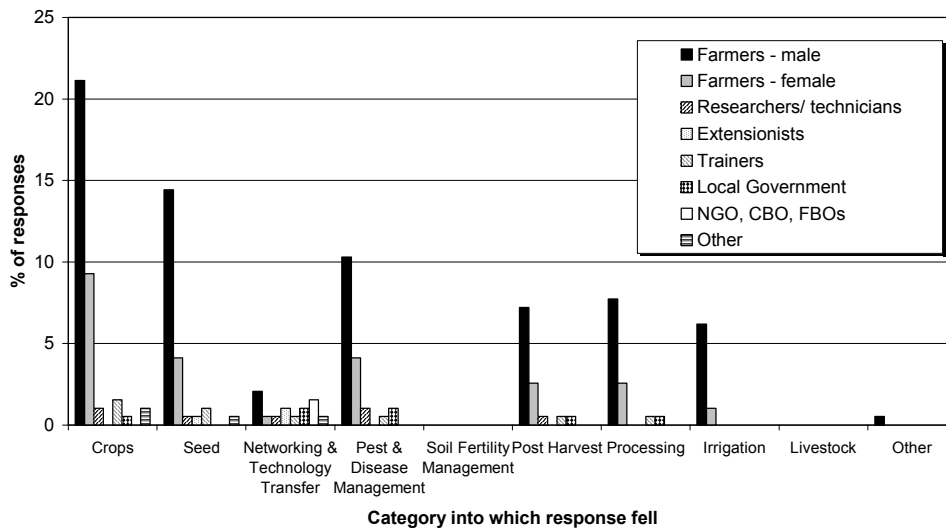
Stakeholder group	Number of respondents at each seed fair location			Total number of respondents
	Mbeya	Shinji	Malinzanga	
Farmers – male	15	21	38	<b>74</b>
Farmers – female	7	19	15	<b>41</b>
Researchers & technicians (ARI Uyole, TACRI, MBIMBA, MAFS Irrigation)	11	0	1	<b>12</b>
Extensionists (DALDOs, DEO, Ward & Village extension officers from different districts)	6	2	1	<b>9</b>
Trainers (teachers, ward education coordinator, MATI Uyole & Igurusi tutors)	3	2	2	<b>7</b>
Local Government (councillor, village chairman, village executive officer)	0	1	2	<b>3</b>
NGO, CBO, FBO staff (Caritas, Concern, MIICO, IRDTF, ADP Mbozi, MVIWATA, Pastors)	8	3	1	<b>12</b>
Others (local brewer, traditional seed grower, traders, caterer)	3	1	1	<b>5</b>
Journalist	0	0	1	<b>1</b>
	<b>53</b>	<b>49</b>	<b>62</b>	<b>164</b>

A workbook including the following bar charts and appendices of summarised responses was created as an input for the Southern Highlands Maize Innovation System Stakeholders Workshop in November 2005. A mixed stakeholder group of the workshop participants were asked to read through the results carefully and interpret their meaning in terms of improving future service provision to different stakeholder groups. The issues they highlighted are presented in the Appendix 4 and have been used to inform this report.

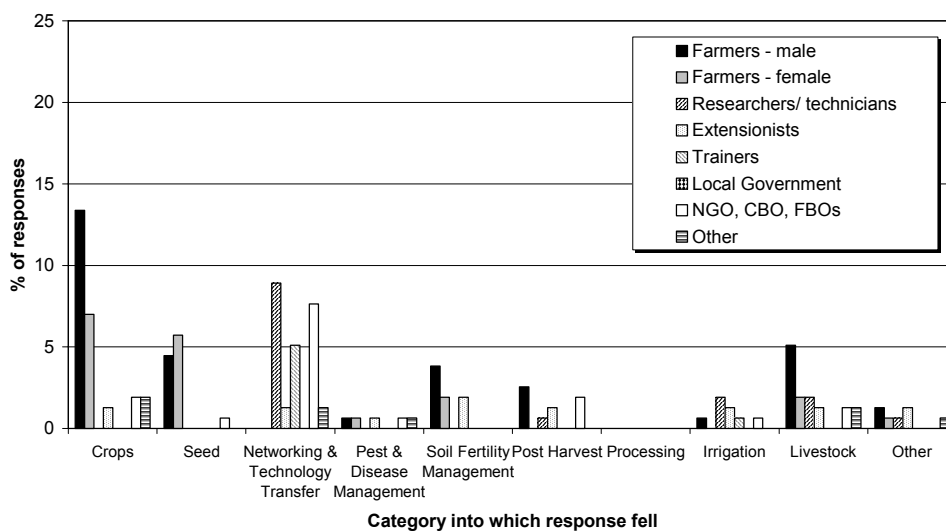
## Findings

### What were the 3 most IMPORTANT things you learnt or got at the seed fair?

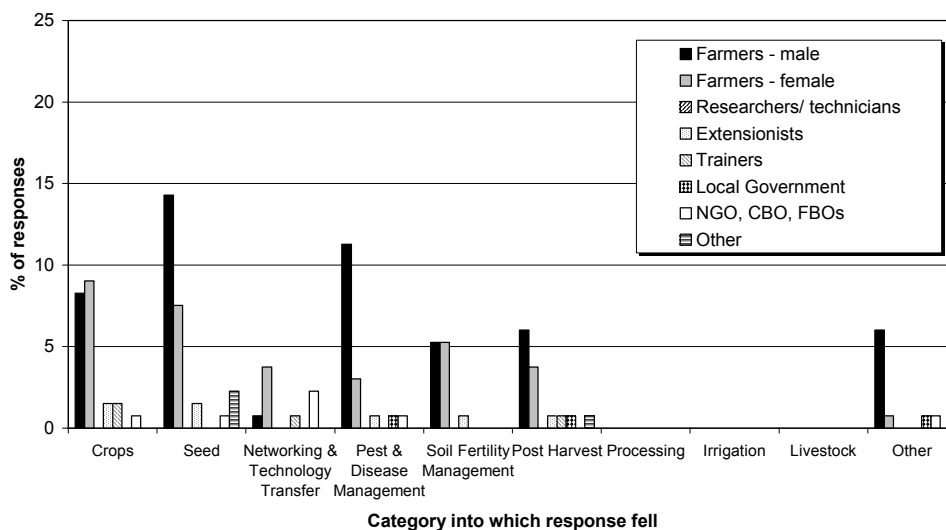
**Malinzanga seed fair**



**Mbeya seed fair**

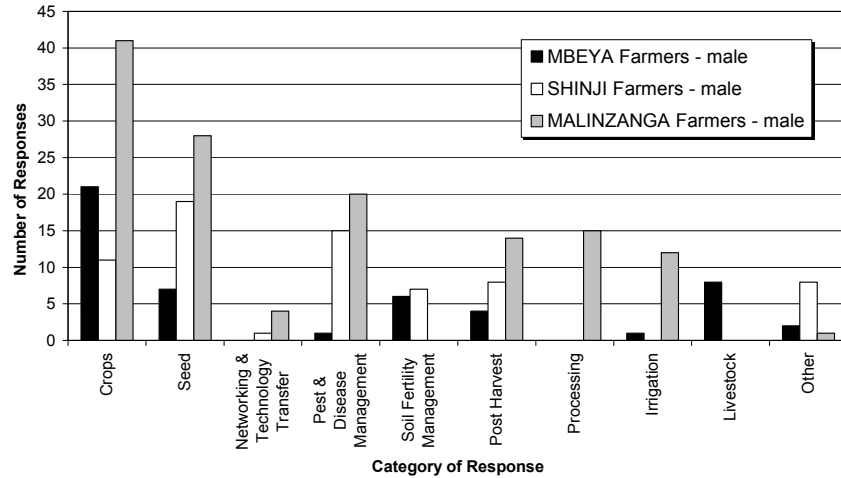


**Shinji seed fair**

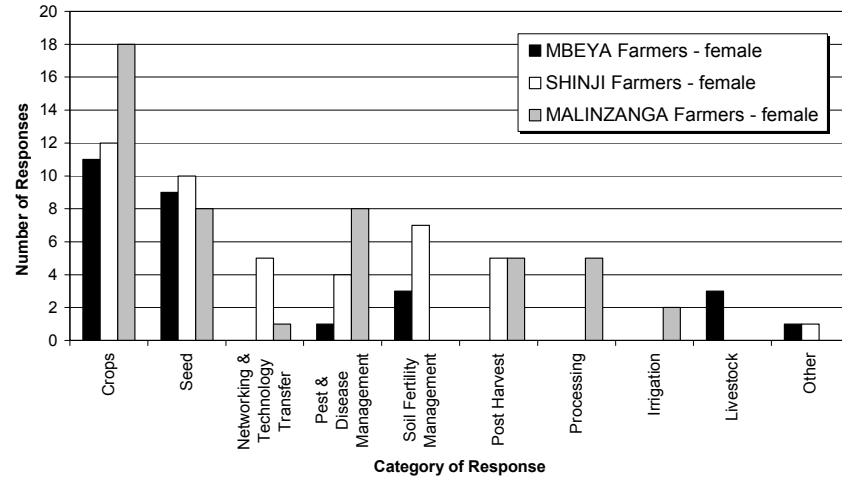


## What were the 3 most IMPORTANT things you learnt or got at the seed fair? (responses disaggregated by stakeholder group)

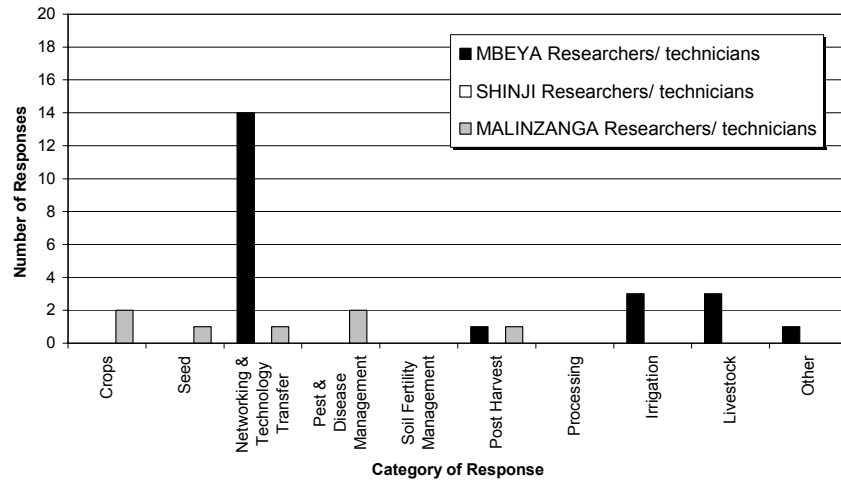
Stakeholder group: Male Farmers (n=72)



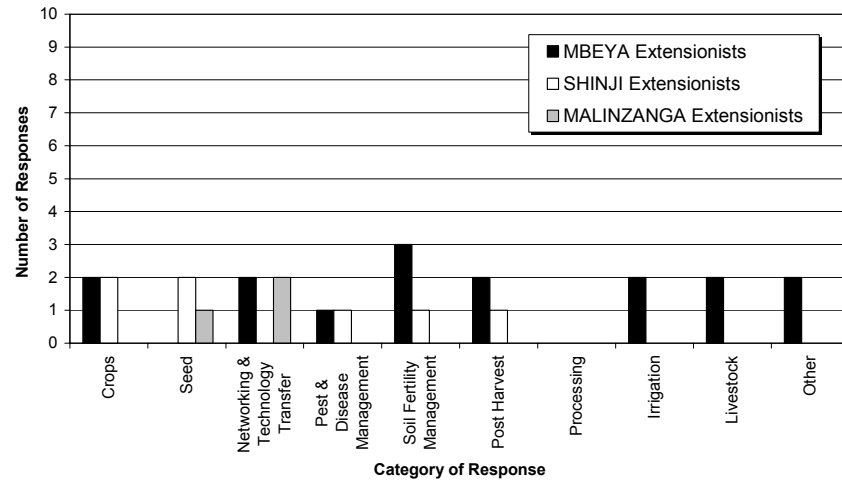
Stakeholder group: Female Farmers (n=41)



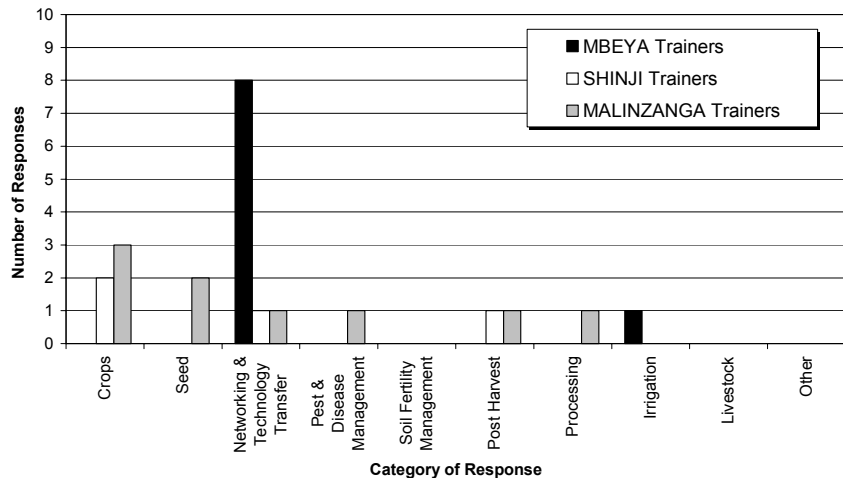
Stakeholder group: Researchers/ Technicians (n=12)



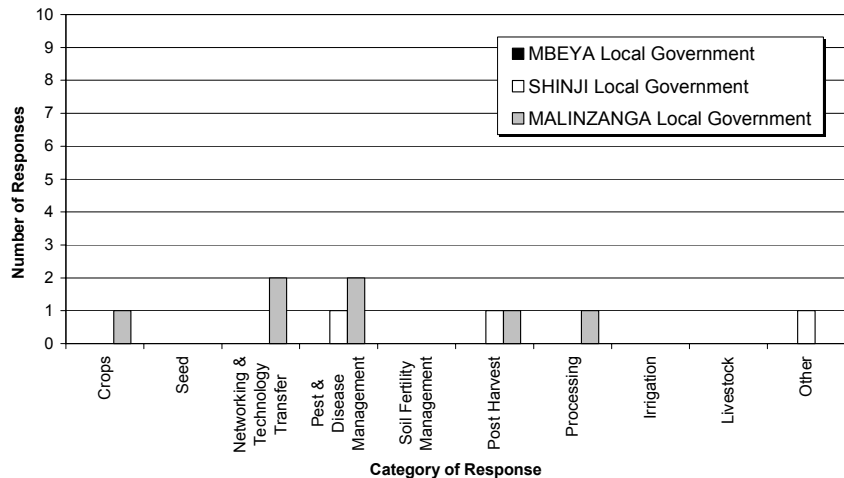
Stakeholder group: Extensionists (n=9)



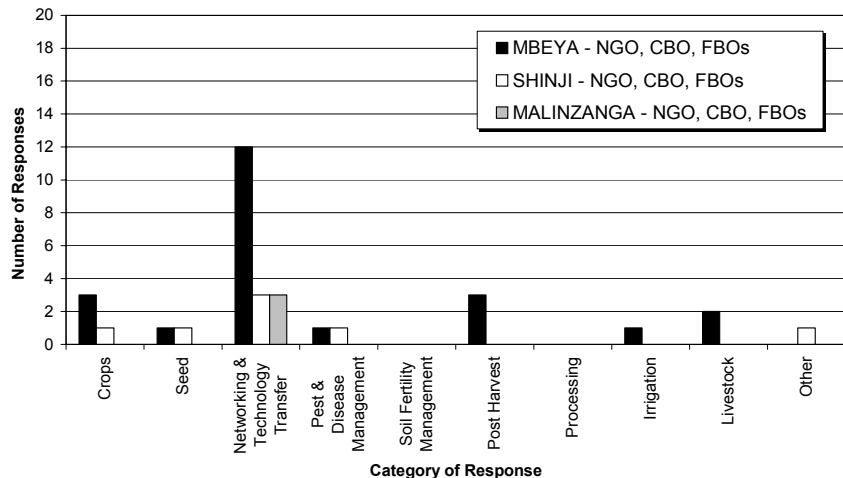
**Stakeholder group: Trainers (n=7)**



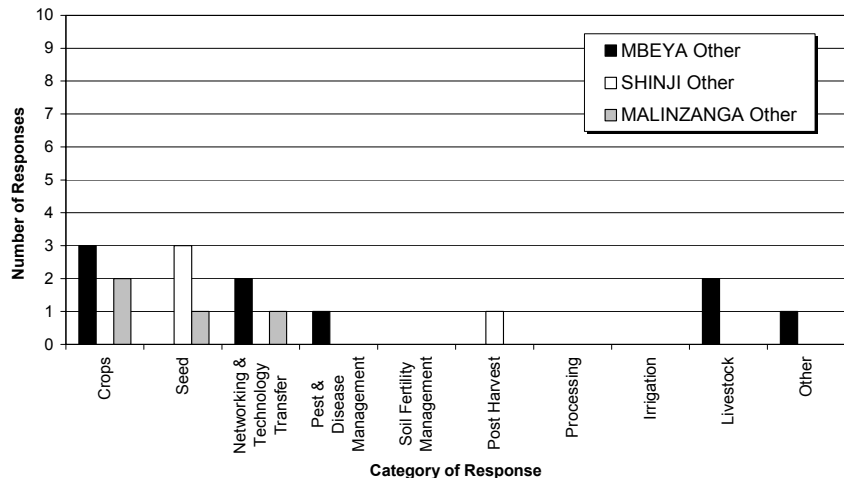
**Stakeholder group: Local Government (n=3)**



**Stakeholder group: NGOs, CBOs, FBOs (n=12)**

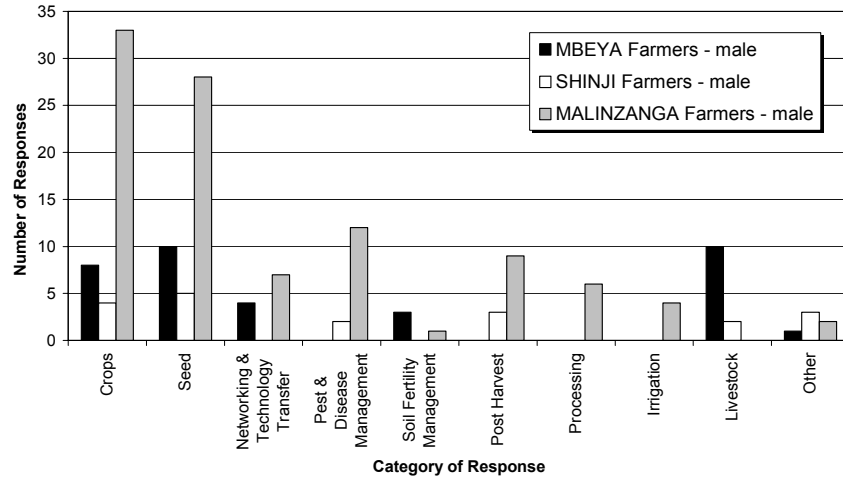


**Stakeholder group: Others (n=3)**

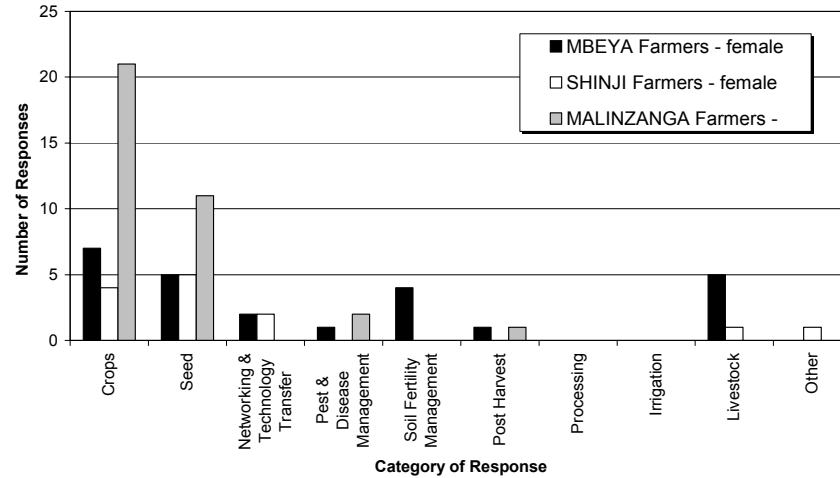


## What did you WANT to learn about? (responses disaggregated by stakeholder group)

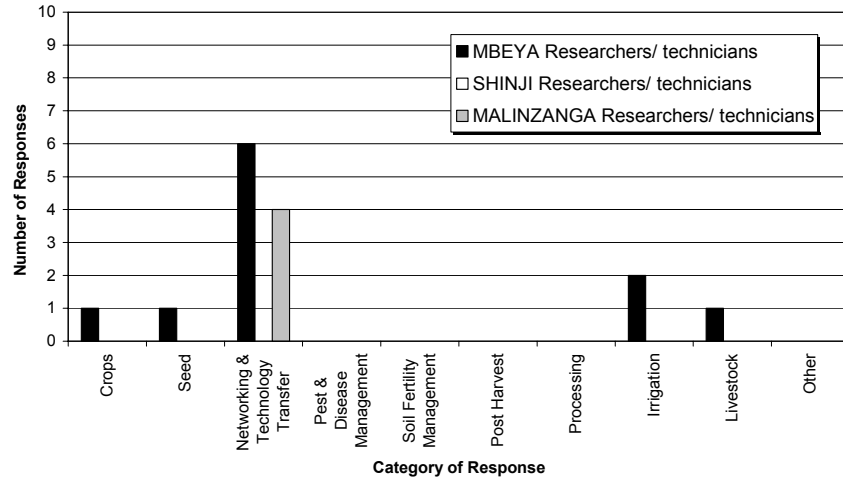
Stakeholder group: Male Farmers (n=72)



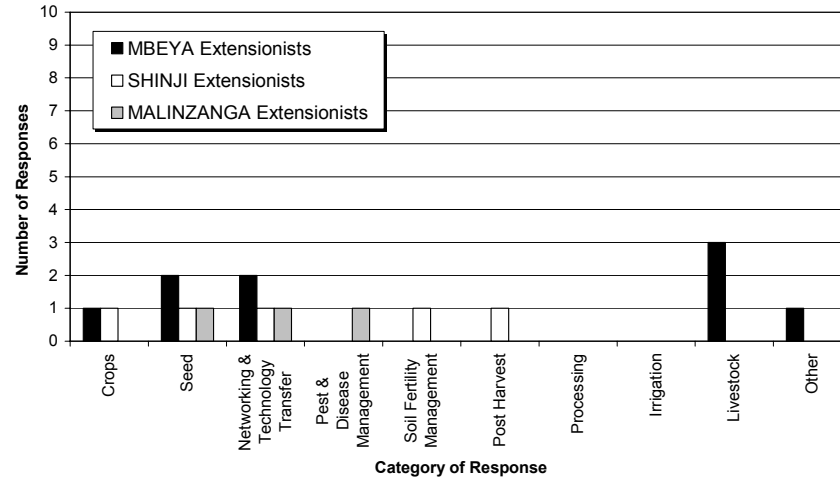
Stakeholder group: Female Farmers (n=41)



Stakeholder group: Researchers, Technicians (n=12)

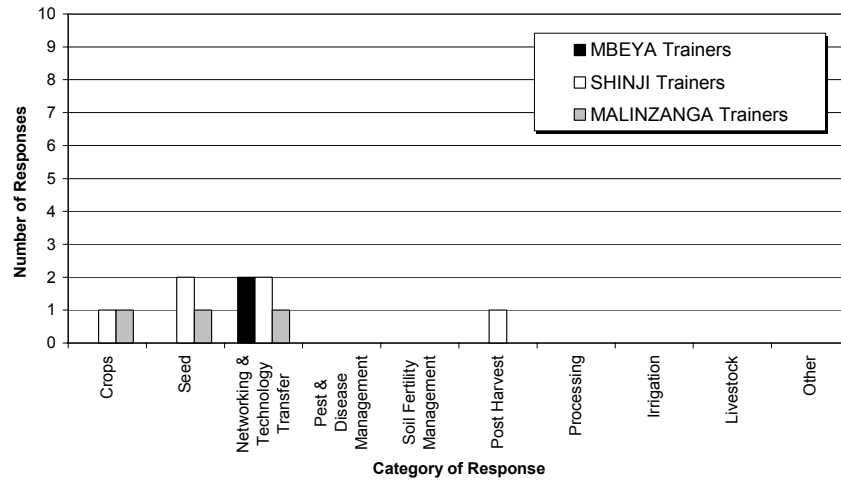


Stakeholder group: Extensionists (n=9)

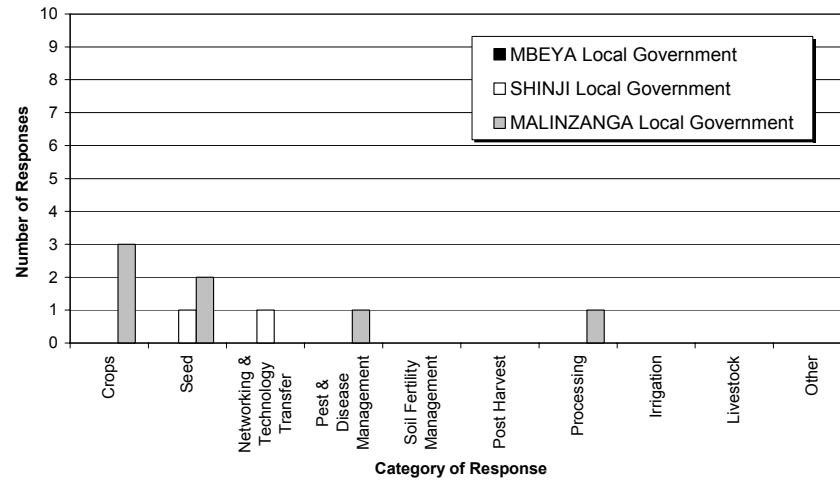




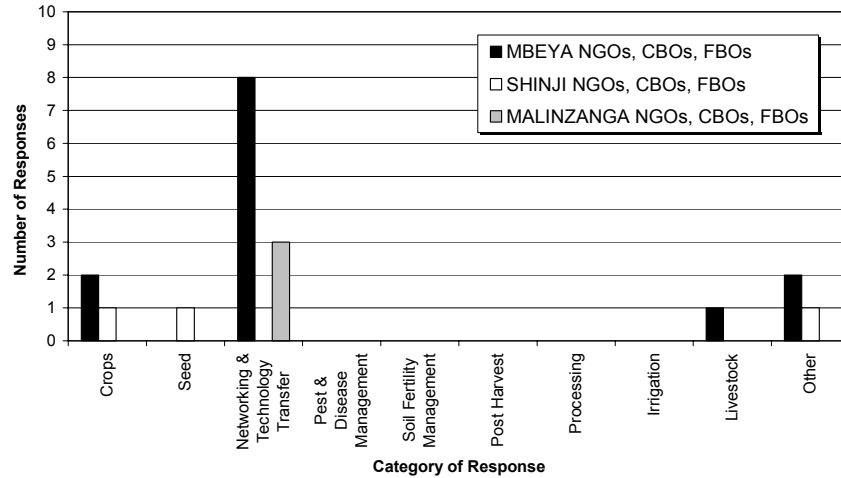
**Stakeholder group: Trainers (n=7)**



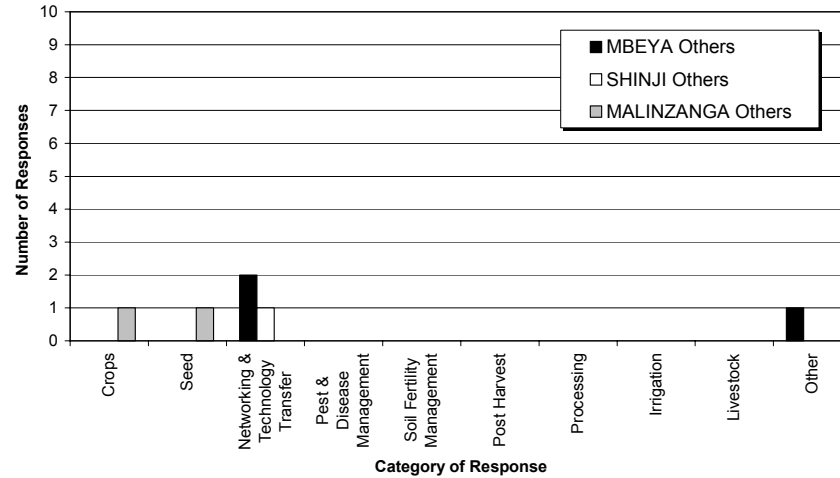
**Stakeholder group: Local Government (n=3)**



**Stakeholder group: NGOs, CBOs, FBOs (n=12)**

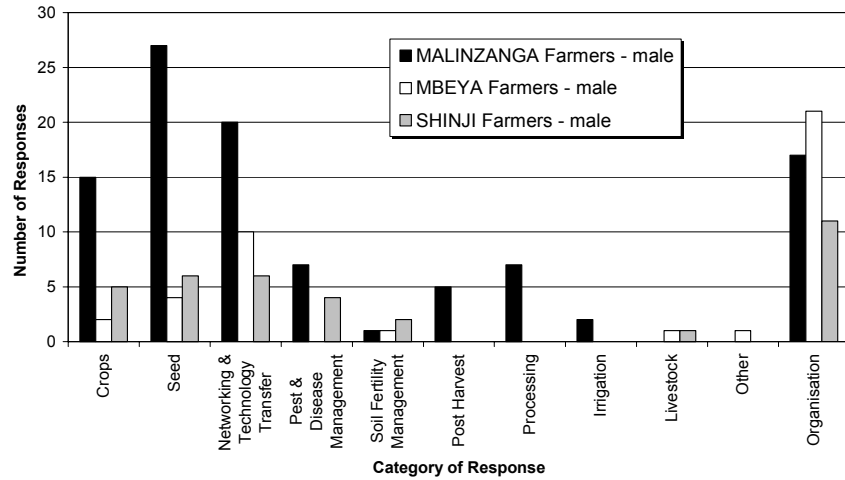


**Stakeholder group: Others (n=5)**

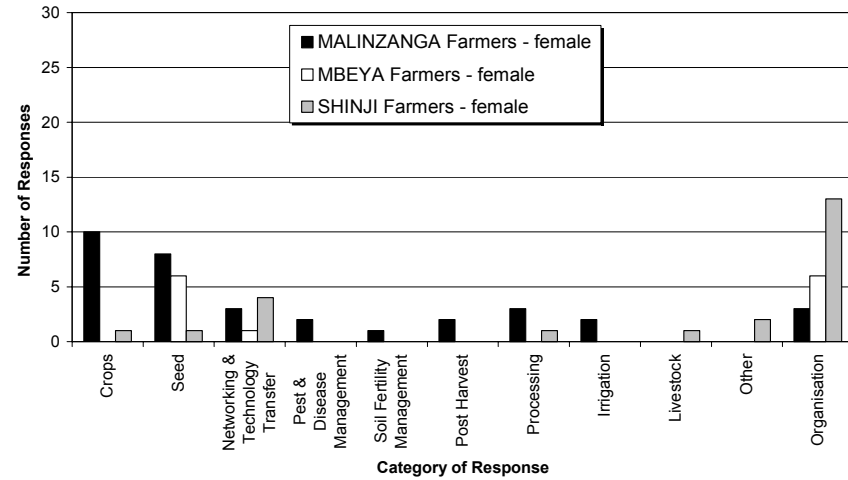


## How could the seed fair have been IMPROVED? (responses disaggregated by stakeholder group)

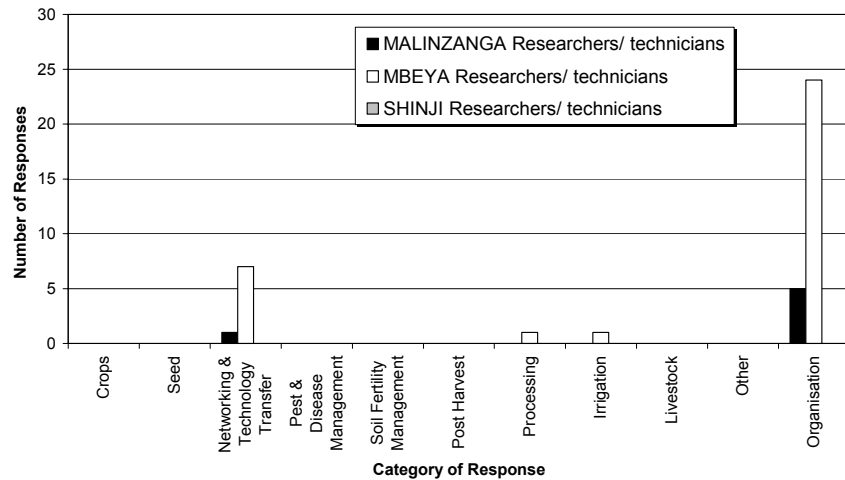
Stakeholder group: Male Farmers (n=72)



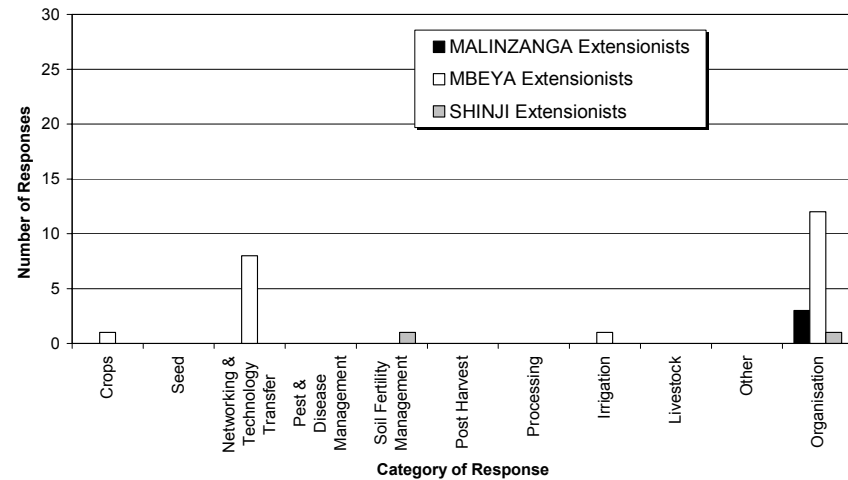
Stakeholder group: Female Farmers (n=41)

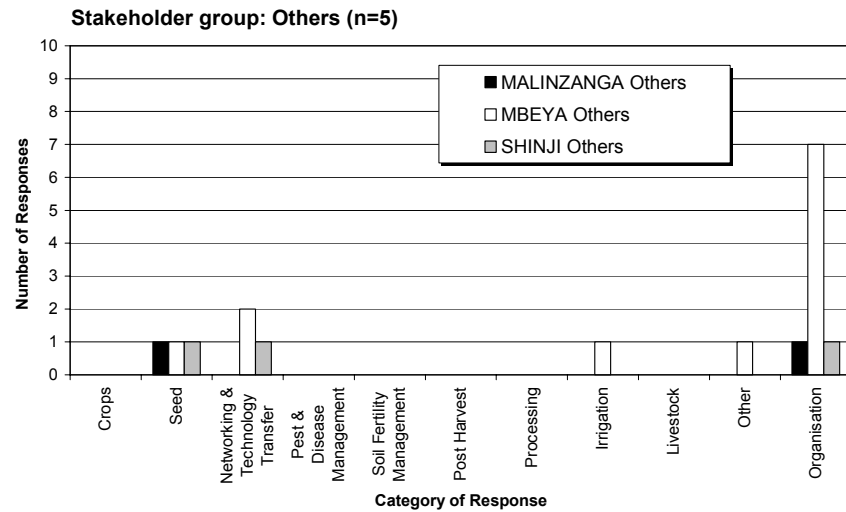
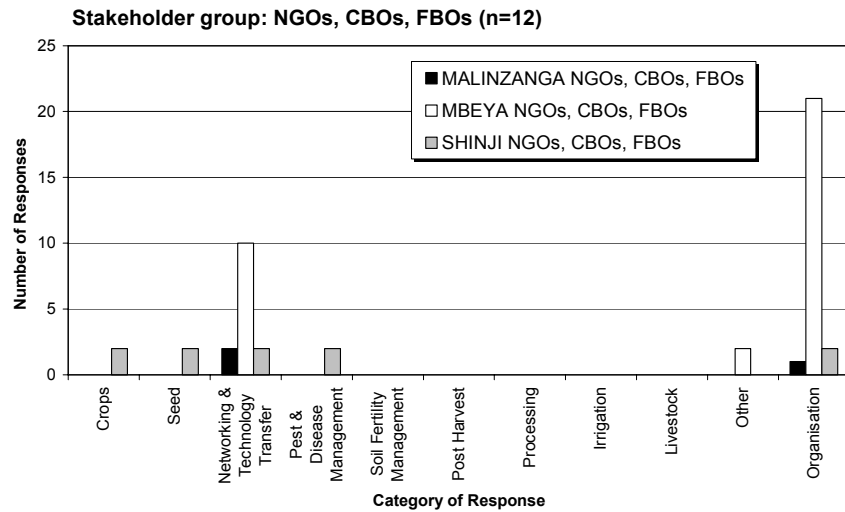
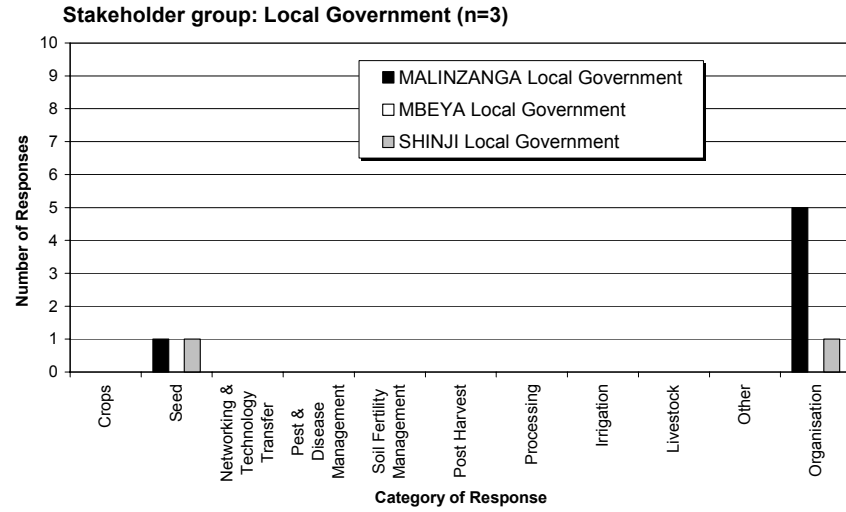
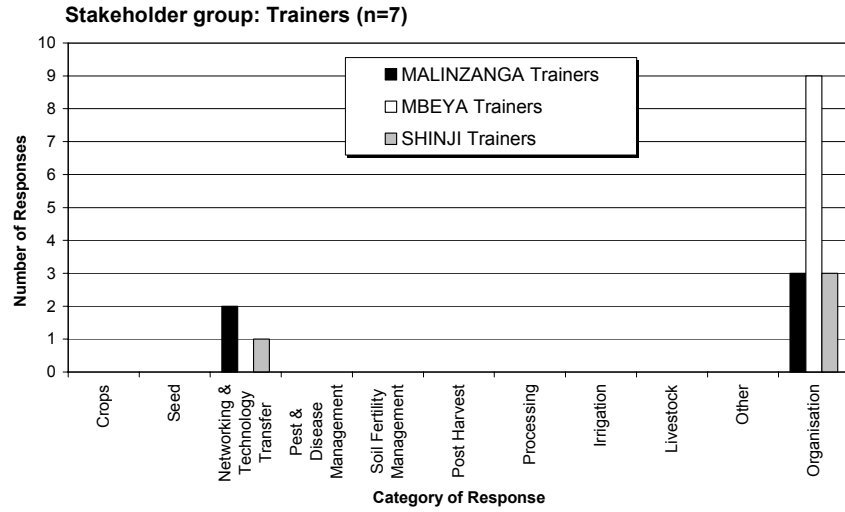


Stakeholder group: Researchers, Technicians (n=12)



Stakeholder group: Extensionists (n=9)





## Discussion

In brief the most important things the male and female farmers at Malinzanga, Mbeya and Shinji learnt about from the seed fair were: crops; seed; pest and disease management; and post harvest and processing. While researchers, technicians, NGOs, CBOs, trainers and local government learnt mainly about networking and technology transfer. Extensionists learnt about soil fertility management, crops and networking and technology transfer. It was clear from the data that the exhibits differed between the three fairs, whilst crops and seed were covered at all fairs, soil fertility management featured more at the Shinji and Mbeya fairs, processing featured more at Malinzanga, and livestock featured more at the Mbeya agricultural show. A very wide range of different crops were included in the fairs (avocado, beans, banana, cassava, groundnut, finger millet, wild fruits, horticultural crops, leeks, livingstone potato, maize, mushrooms, nakukunga (a traditional famine crop), onions, peas, potato, pumpkins, rice, soya beans, sesame, sunflower, sorghum, sweet potato, taro, watermelon, wheat), and many different varieties were exhibited. The interest in seed came from the different perspectives of: seed production (sorting, selection, soil testing for good production); seed biodiversity/ characteristics (traditional and researcher bred, range of sizes, early maturing, drought tolerance, insect pest tolerant, agro-ecological specificity, seed ownership, risk spreading through diverse seed use); seed storage (traditional methods, storage insect pest resistance of traditional seeds). Much of the interest in pest and disease management featured on the use of botanicals as pre and post harvest insecticides, varietal resistance, pest and disease identification and management. The interest in technology transfer and networking included: the recognition of indigenous knowledge; exchange of ideas and learning; collaboration; farmers as competent experts; role of profitability; training methods; farmers groups and networks; stakeholder mix and attendance; and the forms of information available.

In general the categories that the various stakeholder groups mentioned as having learnt about were the same as the categories they had wanted to learn about. In terms of the seed category farmers had wanted to learn about: biodiversity (seeing different types of seed, traditional seeds especially rare/ disappearing ones, and seed from new or improved crop varieties); seed production (a demonstration of seed productions seed harvesting methods, improved seed selection, use of cover crops in seed production, seed treatment for pest control, seed prices and availability information). One extensionist had additionally wanted to learn about traditional seeds suited to the environment s/he was working in.

Suggestions for ways in which the seed fair could have been improved were classified into the same general ten categories described above with an additional category focusing on organisational aspects which captured most of the non farmers' comments. Within the organisation category there were suggestions related to the: content (widening the range of exhibits, focusing on the themes more, schedule with each day focusing on one theme, ensuring plenty of the exhibits have items for sale, more coordination between similar exhibits, organising a guided tour for farmers, better language/ translation arrangements for those vernacular only (non Swahili) speakers, reduction of the non-agricultural activities which distract farmers); more demonstrations/ demonstration plots (to help those unfamiliar with the crop or wanting to learn a skill e.g. how women use oxen ploughs); training (accompanying seminars); more prior publicity; more advanced preparation; wider stakeholder representation (particularly more farmers, individuals from further away as visitors and exhibitors); frequency (organise the seed fairs annually); protocol (wearing of uniforms by farmer groups, improving the calmness); layout (reduce pavilion congestion, ensure closeness of related exhibits, locate food and drink far from exhibits); lengthen (increase the length of the show); funding (government and district councils to support attendance of more farmers, charge an entrance fee so that it can be used to improve the

grounds); management (committed committee to oversee the seed fair); costs (food prices too high); grounds (increase size and improve conditions of the pavilions, reduce dust, locate the show ground nearer to more villages (Shinji), increased irrigation water availability); services (include an information centre, internet, stationery & p/copying etc).

In terms of technology transfer and networking improvements were suggested for: collaboration (making the collaboration between farmers and researchers functional, visiting of farmers by researchers & extensionists, improving feedback to farmers on research findings, research into improving traditional crops, research and extension should make more use of the seed fairs for technology dissemination/ promotion); exchange (seed exchange between farmers, complement fair with farmer exchange visits); content (prior identification of farmers needs to improve targeting of the fair); sales opportunities (seed, oil extraction machines, botanical mixtures); seed bank (should be initiated within the village); training (on grain storage, from researchers & extensionists, targeting youth); information (materials, leaflets should be available at reasonable prices, leaflets should be more pictorial and colourful, information materials should be sold to ensure that those who take them value them, enhance use of videos); demonstrations (exhibition should include demonstration plots); tour (conduct a tour of the show so farmers see new seeds); farmer participation (increase exhibition by farmers); widen stakeholder representation (research institutions from other zones should also participate); communications (information centre, internet should be available at the show grounds).

In terms of seed suggested improvements included: free samples for testing; seed exchange opportunities between farmers; seed bank initiation; training (seed production, seed selection, fruit tree grafting; techniques for improving seed quality); information on varieties (suitability of various varieties for different agro-ecological areas); collaboration (closer collaboration between farmers and researchers for seed breeding work); requests for displays of more seeds from various crops (maize, sunflower, pumpkin, sorghum, cassava, sweetpotato, vegetables); and sales opportunities.

## **Conclusions**

The responses indicate that the seed fair was a very successful learning tool for a wide range of different stakeholder groups and on a wide range of topics. The subject area of these seed fairs was in reality much wider than that of just seed, but seemed to cater to the desires of many of the participants. Agricultural service providers, such as NGOs, research and extension could organise them under the auspices of local governments and make use of them for technology transfer and needs assessment activities.

A survey such as this only allows one to get a feel for what participants found interesting at the time of the seed fair and it would be very interesting to make a further follow up with some of those interviewed after a period of time such as six months or a year had elapsed to see whether they felt they had actually utilised any of the information they had gained from the seed fair.

Future seed/rural livelihoods fairs would benefit from reading through this report and responding to both the demands in terms of areas that different stakeholders had wanted to learn about, and the numerous diverse suggestions for improving the seed fair.

**Appendix 1. Summary of detailed responses to Question 1. What were the 3 most IMPORTANT things you learnt or got at the seed fair?**

**CROPS CATEGORY – What were the most important things you learnt or got at the seed fair?**

Stakeholder group	Crop	Detailed comments on what was learnt	No. of respondents saying this from the different seed fairs (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers	Avocado	Avocado production	1 (0)		
		Grafted avocado	1 (0)		
	Beans	New/ improved bean varieties/seeds	5 (1)		
		New/Improved bean varieties/seeds from ARI Uyole (eg Uyole 94 Uyole 98, Uyole 03, Uyole 04, Uyole 96 & Wanja)	9 (1)	2 (2)	1 (0)
		Beans			1 (0)
		Bean seeds	3 (1)		
		Bean seeds grown by other farmers	1 (0)		
		Preparation of bean seed	1 (0)		
		Bean production and management		2 (0)	
		Traditional bean varieties/ seeds	1 (1)		1 (1)
		Banana	Banana		
	Cassava	Cassava variety tolerant to cold.		1 (0)	
		Cassava crop management			1 (0)
	Groundnut	Groundnut production	1 (1)		
		Groundnut which is bigger and matures early		1 (0)	
		Traditional seeds of groundnuts			1 (1)
	Finger millet	Finger millet			1 (1)
	Fruits (wild)	Wild fruits			1 (1)
	Horticulture	Horticultural production and management		2 (1)	1 (0)
		Traditional tomato			1 (0)
	Leek	Management of leek		1 (0)	
	Livingstone potato	Livingstone potato	3 (1)		
		Livingstone potato from ARI Uyole	3 (1)		
New root crops/varieties of Livingstone potato		1 (0)			
Maize	Proper management of maize	1 (1)	1 (0)		
	Maize			1 (0)	
	Availability of different varieties of maize	1 (1)			
	Improved maize seed	2 (0)	1 (1)		

**CROPS CATEGORY continued - What were the most important things you learnt or got at the seed fair?**

Stakeholder group	Crop	Detailed comments on what was learnt	No. of respondents saying this from the different seed fairs (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers continued	Maize continued	Indigenous maize varieties being maintained by farmers; traditional maize seed suitable for the area; maize varieties being maintained since the 1970s	3 (1)		2 (1)
		Early maturing maize varieties; Bwana Lomba maize variety maturing in 3 months	2 (1)		
		Maize variety 627 that is tolerant to drought		1 (1)	
		Improved maize variety H6303		1 (1)	
		Use of hybrid maize seed.		1 (0)	
		Preparation of maize seed	1 (1)		
		Use of cover crops in maize production		1 (0)	
		Popcorn			1 (1)
	Mushroom	Mushroom production		1 (1)	
	Nakukunga	"Nakukunga" a traditional famine crop.			1 (1)
	Peas	Management of peas		1 (0)	
	Potato	Management of potato		3 (0)	
	Pumpkins	Pumpkins			1 (0)
	Rice	Rice production	1 (1)		
		Difference between Supa and Faya rice varieties	1 (1)		
	Soya	Soya	1 (0)		1 (1)
	Sesame	Traditional sesame seed	1 (0)		
	Sunflower	Sunflower	1 (1)		
		Improved crop management of sunflower		3 (1)	
		Improved sunflower seed and production		3 (2)	
	Sorghum	Early maturing sorghum varieties	2 (2)		
	Sweet potato	Production of sweet potato	1 (0)		
		High yielding and early maturing sweet potato varieties	1 (0)		
		Sweet potato	2 (2)		
		New sweet potato varieties from ARI Uyole	2 (1)		
		Yellow flesh sweet potato	1 (0)		1 (0)
		Improved sweet potato	1 (0)		
Use of fertilizer in sweet potato production			1 (0)		
	Sweetpotato processing & preservation			1 (0)	
Taro	Taro seed (planting material)	2 (0)			

**CROPS CATEGORY continued - What were the most important things you learnt or got at the seed fair?**

Stakeholder group	Crop	Detailed comments on what was learnt	No. of respondents saying this from the different seed fairs (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers continued	Watermelon	Watermelon			6 (4)
	Wheat	Wheat production and management.		3 (1)	
		Improved wheat variety Juhudi		1 (1)	
		Use of fertilizer in wheat production		1 (1)	
	General	Crops in general & different crops		2 (1)	
		Early maturing/ high yielding varieties available for some crops		2 (1)	1 (0)
		Early maturing varieties from ARI Uyole.		1 (0)	
Improved crop management			1 (0)		
Researchers	General	Exposure to a variety of crops & crop varieties growing in the area	2 (0)		
Extensionists	Horticulture	Vegetable vertical garden			1 (0)
	General	Plenty of the crops grown by farmers are underdeveloped			1 (0)
		Traditional fruits used as lotion for smoothing the skin			1 (0)
		Seed of improved crop varieties			1 (0)
Pumpkin	How to utilise traditional crop types like pumpkins.			1 (0)	
Trainers	Liv. potato	Livingstone potato	1 (0)		
	Maize	Different local varieties of maize some with long cobs	1 (0)		
	Sesame	Sesame			1 (1)
	Sweetpotato	Sweetpotato seed/ planting material	1 (0)		
	Taro	Utilization of Taro for food, seed and as a vegetable.	1 (0)		
	Watermelon	Watermelon			1 (1)
Local Govt	Liv. potato	Livingstone potato	1 (1)		
NGOs, CBOs, FBOs	Maize	Maize weeding using small tractor.		1 (0)	
	Mushroom	Mushroom production		1 (0)	
	Sorghum	Sorghum			1 (0)
	Sunflower	Sunflower production		1 (0)	
	Sweetpotato	Sweetpotato production		1 (0)	
	Watermelon	Watermelon			1 (0)
Others	Livingstone potato	Livingstone potato production	1 (0)		
		Livingstone potato seed/planting material.			
	Maize	Maize crop management for higher yields		1 (0)	
	Onions	Onion crop management		1 (0)	
	Sunflower	Sunflower crop management		1 (0)	
	General	Improved crop management		1 (0)	



**SEED CATEGORY - What were the most important things you learnt or got at the seed fair?**

Stakeholder group	Topic	Detailed comments on what was learnt	No. of respondents saying this from the different seed fairs (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers	Seed production	Seed sorting and its importance	1 (0)		
		Proper seed selection	1 (0)		
		How to test soil for production of good seed		1 (1)	
	Biodiversity/ characteristics	See different types of seed and seedlings	1 (0)		2 (0)
		Traditional seeds from other farmers (there are more traditional seeds than those which I have)			9 (4)
		Presence of seed types not owned			2 (0)
		Seeds are not of the same size		1 (0)	
		Seeds may not be suitable for use in all areas in the zone		1 (0)	
		Some seeds are prone to attack by insect pests		1 (0)	
		High yielding and early maturing seeds			1 (0)
		New early maturing varieties from ARI Uyole	1 (0)		
		Improved seed from research			2 (0)
		Drought tolerant crop varieties			1 (1)
		Seeds of a variety of crops like maize, groundnuts, bambara nut, beans and vegetables.			3 (2)
	Seed storage	Traditional seed storage			1 (1)
		Plastered "Kihenge" for seed storage			1 (0)
		Storage of seeds			3 (1)
		Traditional seeds (maize) are good as they are not easily damaged by storage insect pests			1 (0)
	Beans	Bean seeds	1 (0)		
		New/ improved bean varieties from ARI Uyole (Uyole94, Uyole03, Uyole96, Uyole 98 and Wanja)	8 (1)	2 (2)	1 (0)
		Bean seeds grown by other farmers/ traditional	2 (1)		
		Improved/ new bean varieties/ seeds .	4 (1)		
		Preparation of bean seed.	1 (0)		
Cassava	Cassava variety tolerant to cold		1 (0)		
Groundnut	Groundnut which is bigger and matures early		1 (0)		
Maize	Indigenous maize varieties being maintained by farmers; maize varieties being maintained since the 1970s	2 (1)			
	Traditional maize seed suitable for the area	1 (0)		1 (1)	
	Availability of different varieties of maize	1 (0)			

**SEED CATEGORY continued - What were the most important things you learnt or got at the seed fair?**

Stakeholder group	Topic	Detailed comments on what was learnt	No. of respondents saying this from the different seed fairs (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers continued	Maize continued	Improved maize seed	3 (1)		
		Early maturing maize varieties.	1 (1)		
		Bwana Lomba maize variety maturing in 3 months	1 (0)		
		Maize variety 627 that is tolerant to drought	1 (1)		
		Improved maize variety H6303	1 (1)		
		Use of hybrid maize seed	1 (0)		
		Preparation of maize seed	1 (0)		
	Sesame	Traditional sesame seed	1 (0)		
	Sorghum	Early maturing sorghum varieties	2 (2)		
	Sunflower	Improved/ new sunflower seed and production		3 (2)	
	Sweetpotato	New sweet potato varieties from ARI Uyole	2 (1)		
		Improved sweet potato	1 (0)		
		Yellow flesh sweet potato			1 (0)
Taro	Taro seed (planting material).	2 (0)			
Wheat	Improved wheat variety Juhudi.		1 (1)		
Researchers	Biodiversity	Different types of seed used by farmers for their survival	1 (1)		
Extensionists	Biodiversity	Availability of traditional seed for different crops	1 (0)		
		Seed of improved crop varieties			1 (0)
Trainers	Liv. potato	Livingstone potato seed/planting material	1 (0)		
	Sweet potato	Sweet potato seed/planting material	1 (0)		
	Taro	Utilization of Taro for food, seed and as a vegetable	1 (0)		
NGOs, CBOs, FBOs	Biodiversity	Enhanced promotion of traditional seeds		1 (0)	1 (0)
Others	Biodiversity	Seeds that are not owned.			1 (0)
		Improvement of seed.			1 (0)
	Seed storage	Grain and seed storage.			1 (0)
	Liv. potato	Livingstone potato seed/planting material	1 (0)		
Journalist	Biodiversity	A variety of traditional seeds	1 (1)		

**PEST & DISEASE CATEGORY - What were the most important things you learnt or got at the seed fair?**

Stakeholder group	Topic	Detailed comments on what was learnt	No. of respondents saying this (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers	Botanicals	Maize production using ash and botanical insecticides.	1 (1)		
		Use of botanical/ traditional insecticides.	5 (0)		13 (3)
		"Tea" leaves made from wild plants.			1 (0)
		Use of <i>Neuratanenia mitis</i> .			1 (1)
		Use of botanical insecticides in the field	1 (0)		
		Use of botanical insecticides ( <i>Neuratanenia mitis</i> ) for maize stalkborer control.	1 (0)		
		Maize stalkborer damage and control.	1 (1)		
	Botanicals as grain/ seed protectants, post-harvest (PH)	Use of botanical/ traditional insecticides for grain storage/ protection of food in store.	16 (2)		1 (0)
		Maize protection using ash and botanical insecticides.	1 (1)		
		Preparation and use of botanical insecticides for grain storage	1 (1)		
		Use of "Masakasaka" botanical insecticide for maize grain storage	1 (1)		
		Botanical insecticides for seed storage.			1 (0)
	Varietal resistance	Traditional seeds (maize) are good as they are not easily damaged by storage insect pests			1 (0)
	Pest & Disease ID & management	Difference between clean and diseased beans.	1 (1)		
Beanfly damage symptoms and control.		1 (1)			
Control of crop diseases.			1 (1)		
Livestock	Use of pesticides for crops and livestock production.		1 (0)		
	Use of botanical insecticides for livestock pest control.			1 (0)	
Researchers	Botanicals	Use of botanical/ traditional insecticides	1 (0)		
	BotanicalsPH	Use of botanical/ traditional insecticides for grain storage	1 (1)		
Extensionists	Botanicals	Use of botanical/ traditional insecticides		1 (0)	1 (0)
Trainers	BotanicalsPH	Use of botanical/ traditional insecticides for grain storage	1 (0)		
Local Govt	Botanicals	Botanical insecticides which I was not aware existed in the village	1 (0)		
	BotanicalsPH	Use of botanical/ traditional insecticides for grain storage	1 (1)		
	Seed storage	Insecticides for seed storage			1 (0)
NGOs, CBOs, FBOs	Botanicals	Use of botanical/ traditional insecticides (Tephrosia, N. mitis, Pyrethrum etc)		1 (0)	1 (0)
Others	Botanicals	Use of botanical/ traditional insecticides		1 (0)	

**TECHNOLOGY TRANSFER & NETWORKING CATEGORY - What were the most important things you learnt or got at the seed fair?**

Stakeholder group	Topic	Detailed comments on what was learnt	No. of respondents saying this (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers	Local knowledge	Government recognizes farmers indigenous knowledge	1 (1)		
		Farmers do have technologies that just need some improvements			1 (1)
	Networking	Exchanging ideas, learning from others, making acquaintances	2 (0)		1 (1)
		Collaboration between research/extension and farmers			1 (1)
	Training	Received training	1 (0)		1 (1)
		Put into practice all that was learnt at the Seed Fair	1 (0)		
Organisation	Good response of farmers in participating in the Seed fair, farmers are keen & interested in it			2 (1)	
Researchers	Lessons	Farmers are able to confidently express themselves	1 (1)		
		Farmers: have a keen interest to learn new ideas/ technologies; want to practice what they have learnt; want to acquire new products		6 (0)	
		Profitability is key to technologies' adoption.		1 (0)	
	Methods/ Tools	Use of classroom type of training at the show		1 (0)	
		Use of technology adopters in exhibitions at the show.		1 (0)	
		A wide range of technologies were being exhibited.		1 (0)	
		Most crops grown for the exhibition were at the right stage for the show		1 (0)	
	Organisation	Few individuals were seeking information which they could use		1 (0)	
		The services of the Nane nane show are needed by SH farmers		1 (0)	
	Networking	Some technologies from ARI Uyole are being exhibited by different stakeholders		1 (0)	
Extensionists	Networking	Met with other agriculturalists and exchanged experiences	1 (0)		
		Met with researchers working on botanical insecticides	1 (0)		
	Methods/ tools	Importance on farmers' groups and networks		1 (0)	
		Audio-visuals can be effectively used for technology dissemination		1 (0)	
Trainers	Lessons	Farmers are willing to participate in research and learning	2 (0)		
		Interest to learn varies between participants		1 (0)	
		Farmers are not aware of a number of technologies (ie feed mixing)		2 (0)	
		Farmers learn at least one thing which they then practice		1 (1)	
	Networking	The Seed Fair has demonstrated and enhanced collaboration among different stakeholders.			1 (0)

**TECHNOLOGY TRANSFER & NETWORKING CATEGORY continued - What were the most important things you learnt or got at the seed fair?**

Stakeholder group	Topic	Detailed comments on what was learnt	No. of respondents saying this (no. who were female)		
			Malinzanga	Mbeya	Shinji
Trainers continued	Networking	The show is an opportunity for people to do business		1 (1)	
	Organisation	Attendance of farmers has been increasing with time		1 (0)	
		District Councils have sponsored farmers to attend the show		1 (1)	
Local Govt	Networking	Participation by people from the district headquarters & elsewhere	1 (0)		
	Lessons	Good response of farmers in participating in the Seed fair, farmers are keen & interested in it, high numbers attending	1 (0)		
NGOs, CBOs, FBOs	Networking	Technology transfer from research to farmers	1 (0)		
		Research is aiming to improved traditional agriculture	1 (0)		
		Research is giving sustainable technologies to farmers	1 (0)		
		New information obtained on farming and farmer organizations		1 (0)	
		Gained some experience of communicating with farmers		1 (0)	
		Participation of farmers in the exhibition is growing through their organization MVIWATA		1 (0)	
	Methods/ Tools	A variety of technologies from different stakeholders on display		1 (0)	
		Pamphlets/ leaflets have been widely used at the show		1 (0)	
		Public address system has not been as widely used (except by MIICO) for technology transfer		1 (0)	
		Farmers having learnt, are able to participate in exhibition		1 (0)	
		How to improve display of exhibits		1 (0)	
	Networking	Show has been attended by a variety of stakeholders		1 (0)	
		Even non-farmers are interested to learn about farming		1 (0)	
		Keen researchers and extensionists			1 (0)
	Organisation	Preparations were adequate		1 (0)	
		Exhibitions have improved		1 (0)	
Attendance to the Seed Fair very good				1 (0)	
Seed Fair appreciated by farmers				1 (0)	
Others	Lesson	Attend public meetings	1 (0)		
		High farmers' response to and interest in the show		1 (0)	
	Networking	Exchanged ideas with experts		1 (0)	

**SOIL FERTILITY MANAGEMENT CATEGORY - What were the most important things you learnt or got at the seed fair?**

Stakeholder group	Topic	Detailed comments on what was learnt	No. of respondents saying this (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers	Organic/ green manure	Preparation of compost manure		2 (1)	
		Preparation of Farm Yard Manure		1 (0)	1 (0)
		Cover crops like <i>Mucuna</i> for soil fertility improvement		1 (1)	2 (2)
		Use of cover crops in maize production		1 (0)	
		Traditional fertilizers like night soil			5 (3)
		Traditional fertilizers			3 (1)
		Mulch for soil fertility improvement		2 (1)	
		Banana ashes used as soda/lime (Magadi)			2 (1)
		Local brew remains ( <i>Machicha</i> ) used as fertilizer			1 (0)
	Sweetpotato	Use of fertilizer in sweet potato production		1 (0)	
Wheat	Use of fertilizer in wheat production		1 (0)		
Extensionists	Organic/ green manure	Use of cover crops like <i>Mucuna</i> for soil fertility improvement		3 (0)	
		Traditional fertilizers			1 (0)

**POST HARVEST & PROCESSING CATEGORY - What were the most important things you learnt or got at the seed fair?**

Stakeholder group	Topic	Detailed comments on what was learnt	No. of respondents saying this (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers	Botanical and traditional pesticides	Use of botanical insecticides for protection of food grain during storage	15 (1)		2 (0)
		Use of botanicals/traditional insecticides (ie ash) for grain storage pest control	2 (1)		
		Use of "Masakasaka" botanical insecticide for maize grain storage	1 (1)		
		Preparation and use of botanical insecticides for grain storage	1 (1)		
		Use of cow dung for protection of stored beans from insect pests			1 (1)
	Grain storage	Maize and other grains' storage			2 (1)
	Seed storage	Preservation/ storage of traditional seeds			2 (1)
		Traditional seeds (maize) are not easily damaged by storage insect pests			1 (0)
		Plastered ' <i>kihenge</i> ' for seed storage.			1 (0)
	Oil press	Machine for sunflower oil extraction	20 (5)		

**POST HARVEST & PROCESSING CATEGORY continued - What were the most important things you learnt or got at the seed fair?**

Farmers continued	Banana	Banana is a staple food for some people		1 (0)	
	Rodents	Different types of rats and their behaviour		1 (0)	
	Rodents	Traditional rat trap			1 (0)
	Food	Preparation of nutritional foods		1 (0)	
		Food and feed processing		1 (0)	
		Traditional utensils for keeping food warm			1 (0)
		Pounding grain using pestle and mortar ('kinu') as of old.			1 (1)
Packaging	Packaging of produce.			1 (1)	
Extensionists	Seed storage	Preservation/ storage of traditional seeds			1 (0)
	Vegetables	Vegetable drying		1 (0)	
	Banana	Processing of banana into various products		1 (0)	
Researchers	Botanicals	How farmers use ethno botanicals for grain storage	1 (1)		
	Preservation	Preservation of foods commonly used in the households		1 (0)	
Trainers	Botanicals	Use of botanical insecticides for grain storage	1 (0)		
	Oil press	Machine for sunflower oil extraction	1 (0)		
	Pounding	Traditional grinding of grain			1 (1)
Local Government	Botanicals	Use of botanical insecticides for grain storage	1 (1)		
	Pesticides	Insecticides for seed storage			1 (0)
	Oil press	Machine for sunflower oil extraction	1 (1)		
NGOs, CBOs, FBOs	Packaging	Enhanced marketing of agric. products through better packaging		1 (0)	
	Process	Saw a range of processed and unprocessed products		1 (0)	
	Value adding	Increased emphasis on value adding of agricultural products		1 (0)	
Others	Storage	Grain and seed storage			1 (0)

## Appendix 2. Summary of detailed responses to Question 2. What did you WANT to learn about?

### SEED CATEGORY – What did you WANT to learn about responses

Stakeholder group	Topics	Comments	No. of respondents saying this (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers	Biodiversity	See different types of seed	1 (0)		3 (3)
		Traditional seeds	1 (0)		2 (1)
		Disappearing traditional seeds	1 (0)		
		Traditional seeds which I do not have so I could buy			1 (0)
		Different crops/seeds/varieties from different areas	5 (2)		
		Obtain seed types that are new/ not possessed			1 (0)
		Uses and importance of different seeds			1 (0)
		Seed of new/ improved crop varieties	5 (3)	1 (1)	
		New high yielding crop varieties	1 (0)		
		Early maturing crop varieties	1 (0)		
	Seed production	Seed production through demonstration	1 (0)	1 (0)	
		How to harvest new seed		1 (1)	
		Selection of improved seed		1 (0)	
		How to use cover crops in the production of seed		1 (1)	
		Seed preparation.	1 (0)		
		Seeds of maize that is treated for pest control.	1 (0)		
		Assurance of getting seed		1 (0)	
		Prices of seed		1 (0)	
		Productivity of the seed.		1 (0)	
		Nutrient content of the new seeds.		1 (0)	
		Side effects of the new seeds.		1 (0)	
		How to produce maize and bean seed.		1 (1)	
		How to select plants and management of sunflower seed		1 (1)	
		Avocado	Avocado seed/planting material/ propagation	2 (0)	
	Bananas	A wide variety of bananas		1 (0)	
	Bean	Improved bean varieties and their management	3 (1)		
		Purchase bean seeds		1 (0)	
	Groundnut	Improved groundnut seed.	1 (0)		
	Maize	New maize varieties and their management.	1 (1)		
		Improved maize seed.	2 (0)		
Maize varieties suitable for the area.		1 (0)			



**SEED CATEGORY continued – What did you WANT to learn about responses**

Stakeholder group	Topics	Comments	No. of respondents saying this (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers continued	Maize continued	Early maturing and high yielding maize varieties.	2 (1)		
		Improved maize seed that is drought tolerant.	1 (0)		
		Improved maize seed from Idodi.	1 (1)		
	Potato	Potato seed preparation		1 (0)	
	Rice	Rice varieties suitable for the area.	1 (0)		
		New/ improved varieties of rice.	2 (1)		
	Sunflower	High yielding/ improved sunflower varieties.	2 (0)		
	Sorghum	Improved sorghum seed.	1 (0)		
	Sesame	New sesame varieties.	1 (1)		
	Sweetpotato	Early maturing sweet potato.	1 (0)		
Sweet potato seed/planting material.		2 (1)			
Vegetable	<i>Amaranthus</i> seed			1 (0)	
	African cabbage (Figiri) seed			1 (0)	
Extensionists	Biodiversity	Seeds of different types		1 (0)	
		Traditional seed suited for the environment where I am working	1 (0)		
	Seed storage	Storage/Preservation of improved seeds			1 (0)
	Maize	Maize seed from ARI Uyole on sale at the grounds		1 (0)	
Trainers	Biodiversity	Available traditional seeds	1 (0)		
		Traditional crop varieties that are not available in the area			1 (1)
	Seed storage	Seed storage			1 (1)
Local Govt	Biodiversity	Seed of different improved crop varieties	1 (0)		
		Seed other than those available within the village			1 (0)
	Bean	Improved bean varieties available from research	1 (1)		
NGOs, CBOs, FBOs	Biodiversity	Seed of different crops that is suitable for the environment			1 (0)
Others	Biodiversity	Different crops/seeds from different areas	1 (0)		

**PEST and DISEASE CATEGORY – What did you WANT to learn about responses**

Stakeholder group	Topic	Comments	No. of respondents saying this (no. who were female)			
			Malinzanga	Mbeya	Shinji	
Farmers	General	Pests and disease control		1 (1)		
	Botanicals	Use and action of botanical insecticides, and where they can be obtained from	4 (1)			
	Pesticides	Traditional insecticides		1 (0)		
		Insect pest control using pesticides (industrial and botanical)		2 (0)		
		New pesticides		1 (0)		
	Grain/ seed protectants	Grain storage botanical & traditional pesticides		3 (0)		2 (0)
		Grain storage pesticides.		2 (1)		
Seeds of maize that is treated for pest control.			1 (0)			
Extensionists	Botanicals	Preparation and use of botanical insecticides	1 (0)			
Local Govt	Pesticides	Insect pest control using pesticides (industrial and botanical)	1 (0)			

**POST HARVEST and PROCESSING CATEGORIES – What did you WANT to learn about responses**

Stakeholder group	Topic	Comments	No. of respondents saying this (no. who were female)			
			Malinzanga	Mbeya	Shinji	
Farmers	Crop storage	Information on grain storage	4 (0)		1 (0)	
		Storage of beans	1 (0)			
		Storage pests	1 (0)			
	Protectants	Grain storage pesticides		2 (1)		
		Botanical & traditional pesticides for grain storage		3 (0)		2 (0)
	Oil extraction	Oil press and sunflower oil extraction		6 (0)		
	Food	Food processing and packaging		1 (0)		
Extensionists	Seed storage	Storage/ preservation of improved seeds			1 (0)	
Trainers	Seed storage	Seed storage			1 (1)	
Local Govt	Oil extraction	Demonstration of the oil press	1 (1)			

**TECHNOLOGY TRANSFER & NETWORKING CATEGORY – What did you WANT to learn about responses**

Stakeholder group	Topic	Comments	No. of respondents saying this (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers	Exchange of ideas	Learn from research and extension on improved crop management	1 (0)		
		What other farmers do	1 (0)	2 (0)	
		Learning about new things	2 (0)		
		Experience from other areas			1 (1)
		Exchange of experience/ ideas with others	1 (0)	1 (0)	
		How people from different regions do business		1 (0)	
		Learn about/ see different products from newcomers	1 (0)	1 (1)	
	Demonstration	Demonstration of planting using draft animals		1 (1)	
	Miscellaneous	Enjoy the gathering	1 (0)		
Extensionists	Exchange of ideas	Meet other people to exchange experience	1 (0)		
		Various businesses from different countries		1 (0)	
	Media/ tools	Adequate Mass Media publicity of the show		1 (0)	
	Sale opps.	Items for sale			1 (0)
Researchers	Others views	Exhibitions from stakeholders other than farmers.	1 (1)		
		How well informed district council were about new technologies		1 (0)	
		A wider range of crops than was exhibited	1 (0)		
		Finished products, but they were inadequately exhibited.		1 (0)	
		Promotion of large scale farming.		1 (0)	
		Adequate scientific backing information of what was being exhibited by a number of pavilions		1 (0)	
Trainers	Exchange of ideas	Farmers views through the Guest of honour interviewing them	1 (0)		
		Exhibitions from different stakeholders from outside the zone		2 (1)	
		Exhibitions from different stakeholders from outside the district			1 (0)
	Opportunities	Crops that are obtainable			1 (0)
Local Govt	Exchange	Exchange of experience/ ideas with others			1 (0)
NGOs, CBOs, FBOs	Exchange of ideas	Exchange of information/ collaboration between stakeholders.	1 (0)	1 (0)	
		To see farmers disseminating knowledge to one another	1 (0)		
		Adequate participation of the target group	1 (0)		
	Work by Ministries related to agriculture, but it was not prominent		1 (0)		
	Sale opps.	Affordable products for smallholder farmers' use		2 (0)	
Others	Opportunities	Different agricultural products		1 (0)	
		New technologies		1 (0)	
	Training	Receive training			1 (0)

**Appendix 3. Summary of detailed responses to Question 3. How could the seed fair have been IMPROVED?**

**ORGANISATION CATEGORY – How to IMPROVE the seed fair responses**

Stakeholder group	Topic	Comments	No. of respondents saying this (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers	Content	Guided tour for the farmers		1 (0)	
		Increase the number of items to be exhibited			1 (1)
		Farmers involved in the exhibition should be assisted by those who know Kiswahili			1 (1)
	Guided tour	Participants should make an effort to visit all pavilions at the Fair.	1 (1)		
	More demos	Demonstration of how women use oxen for cultivation/ ploughing			1 (1)
		More demonstration plots should be included in the show so that participants can know how some of the unfamiliar plants look like			1 (1)
	Training	The Seed Fair should be accompanied with seminars			1 (1)
	Prior publicity	Prior publicity about the Seed Fair should be improved (could involve village govt)	3 (0)	2 (0)	1 (0)
	Better preparation	Increase the time for preparation of the display materials	1 (1)		1 (0)
		Implements used should be in place	1 (1)		
		Expand the size of the demonstration plots	2 (0)		
	Widen stakeholder representation	Increase the number of farmers attending the show.	2 (0)	1 (0)	
		Increase the number of farmers exhibiting.	1 (0)	3 (0)	
		Increase participation of farmers from other villages	2 (1)		
		Extend the show to the villages		1 (0)	
		Improve participation of different sectors in the show		1 (0)	
		Attendance of the Seed Fair should include farmers from distant areas			2 (1)
		The Seed Fair should be organized in different places			1(0)
	Frequency	Seed Fair should be organized annually	6 (0)		7 (4)
	Protocol	Village government should ensure peace at the Show.	1 (0)		
		Improve calmness and attention among the attendees.			1 (0)
		Farmer group members involved in the Show should wear uniforms.			1 (1)
	Layout	Reduce congestion in pavilions.	1 (0)		
Food and drink services are far from the exhibitions pavilions.			1 (0)		
Improve layout of pavilions so that those exhibiting seeds are together			2 (0)		
Layout	Improve arrangement of displayed materials			1 (0)	

**ORGANISATION CATEGORY – How to IMPROVE the seed fair responses**

Stakeholder group	Topic	Comments	No. of respondents saying this (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers continued	Layout continued	Include display of equipment like hoes and artifacts like mats and the like			1 (1)
	Lengthen	Time for the show be increased		3 (1)	1 (1)
		Farmers should spend adequate time at the show to learn		1 (1)	
	Funding	Where possible the government should facilitate many farmers to attend the show		1 (0)	
		The exhibitors should be given some motivation			1 (0)
	Cost	Price of foods are too high for the visitors		1 (0)	
	Grounds	Increase the size and improve the condition of the pavilions.	1 (0)		
		Improve grounds infrastructure to reduce the dusty conditions		2 (1)	
		Improve access paths so that its easier to see		2 (2)	
	Livestock	Livestock should also be on display			1 (0)
	Miscellaneous	Extensionists should be motivated.		1 (0)	
Enhance collaboration for success.			1 (0)		
Extensionists	Content	Guided tour for the farmer representatives sponsors		1 (0)	
		Of the items on exhibition some should be available for sale.		1 (0)	
	Prior publicity	Prior publicity about the Seed Fair should be improved	1 (0)		
	Better preparation	Increase investment in the preparation of the show.		2 (0)	
		Different stakeholders should be involved in the planning of the show including farmers		1 (0)	
	Widen stakeholder representation	Research institutions from other zones should also participate in the exhibitions.		1 (0)	
		The Seed Fair should be organized in other villages too.	1 (0)		
	Protocol	Guest of Honour and judges should target exhibiting farmers		1 (0)	
	Lengthen	Duration of the exhibition should be increased	1 (0)		
	Evaluation	Organise a multi-stakeholder evaluation workshop to assess the show and come up with recommendations for improvements		1 (0)	
	Funding	The government should provide input subsidy		1 (0)	
		District councils should facilitate more farmers to attend the show		1 (0)	
	Grounds	Improve grounds infrastructure to reduce the dusty conditions		1 (0)	
Increase availability of irrigation water			1 (0)		
Show location was too far from many villages which limited attendance				1 (0)	

**ORGANISATION CATEGORY continued – How to IMPROVE the seed fair responses**

Stakeholder group	Topic	Comments	No. of respondents saying this (no. who were female)		
			Malinzanga	Mbeya	Shinji
Researchers	Management	Keen & committed committee should oversee the Seed Fair	1 (0)		
		The themes for the show should be more focused.		2 (0)	
	Prior publicity	Improve prior publicity to increase farmer attendance of Seed Fair	3 (2)	1 (0)	
	Widen	Participation by a broader range of stakeholders	1 (1)		
	Better preparation	Increase the time for preparation of the display materials		1 (0)	
		Improve communication between the organizers and exhibitors		1 (0)	
	Content	Institutions exhibiting similar technologies should coordinate to avoid giving contradicting information to farmers		1 (0)	
	Funding	Entrance fees to the show should be paid so as to raise funds for improvement of the grounds		1 (0)	
	Grounds	Improve show grounds infrastructure especially irrigation water		2 (0)	
		Reduce the dusty conditions at the grounds		1 (0)	
	Layout	Planting of tall crops together hinders photographing		1 (0)	
		Grounds layout should ensure easy accessibility of related items		1 (0)	
		Separate technology promotion pavilions from social & trade ones		1 (0)	
	Protocol	Assessment of pavilions should be open		1 (0)	
		Only those pavilions ready for exhibition on the first day of the show should be allowed to exhibit		1 (0)	
		Guest of honour should endeavour to visit all pavilions		1 (0)	
		Adequate materials for exhibitors e.g. uniforms		1 (0)	
		Farmers representatives from the districts should be given a chance to give their views of the show		1 (0)	
	Regularly	Ensure continuity of the show and maintain its impetus		1 (0)	
	Services	Build hotel in the grounds to accommodate visitors from far away		1 (0)	
One central information point for the Nanenane show			1 (0)		
Widen stakeholder representation	Farmers participation should not be restricted to the show days		1 (0)		
	Increase the number of exhibitors from outside Mbeya		1 (0)		
Wider issues	Utilise the grounds for other functions in between Nanenane		1 (0)		
Trainers	Prior publicity	Improve prior publicity to increase farmer attendance of Seed Fair		1 (0)	
	Better preparation	Increase the time for preparation of the display materials	1 (0)		
		Efforts should be made to ensure that all pavilions commence exhibiting on the first day of the show		1 (0)	

**ORGANISATION CATEGORY continued – How to IMPROVE the seed fair responses**

Stakeholder group	Topic	Comments	No. of respondents saying this (no. who were female)			
			Malinzanga	Mbeya	Shinji	
Trainers continued	Widen stakeholder representation	Number of villages involved in the Seed Fair should be increased	1 (0)			
	Frequency	The Seed Fair should be organized annually			1 (1)	
	Lengthen	Increase the duration of the Seed Fair	1 (0)	1 (0)		
	Layout	The show should be organized in open grounds			1 (0)	
	Funding	Ministry should set aside a budget for preparing the show The organisers should motivate the farmers			1 (0)	
					1 (0)	
	Grounds	Improve show grounds infrastructure especially irrigation water Improve show grounds infrastructure to reduce dust and improve layout		2 (1)		
				1 (0)		
	Services	There should be an Information Centre at the grounds		1 (0)		
Wider issues	Nanenane grounds should be used for other functions		1 (0)			
Local Govt	Better preparation	Increase the time for preparation of the display materials	2 (1)			
	Regularly	Seed Fair should be a permanent occasion and should be organized in rotation	1 (0)			
	Widen	Farmers from the whole division of Idodi should participate	1 (1)			
		Participants should come from different districts & regions	1 (0)		1 (1)	
NGOs, CBOs, FBOs	Content	Prior identification by stakeholders of farmers needs which should be addressed at the show		1 (0)		
		There should be a schedule for the show with each day focusing on a particular theme/aspect		1 (0)		
		Use the show more as an occasion for farmers to market their products		1 (0)		
		Exhibited materials available in sufficient amounts for sale		1 (0)		
		Reduce the non-agricultural activities which distract farmers		1 (0)		
	Services	Services like show information, internet, stationery and printing should be available within the grounds		3 (0)		
	Prior publicity	Improve prior publicity to increase farmer attendance of Seed Fair		2 (0)	1 (0)	
	Better preparation	Better preparations should be made so that all pavilions start exhibiting on the first day of the show		1 (0)		
	Widen s/holder representation	Increase the participation of smallholder farmers at the show		1 (0)		
		Increase the participation of innovative farmers in exhibiting		1 (0)		

**ORGANISATION CATEGORY continued – How to IMPROVE the seed fair responses**

Stakeholder group	Topic	Comments	No. of respondents saying this (no. who were female)		
			Malinzanga	Mbeya	Shinji
NGOs, CBOs, FBOs	Frequency	The Seed Fair should not be restricted to a specific period of the year as for Nanenane	1 (0)		
		The Nanenane show should be a culmination of similar shows from village level		1 (0)	
		The seed fair should be repeated			1 (0)
		The show should be held in rotation in the S. Highlands regions		1 (0)	
	Layout	Grounds layout should ensure easy accessibility of related items		1 (0)	
	Funding	Farmers should be facilitated to attend the show		2 (0)	
	Grounds	Infrastructure needs improving to reduce the dusty conditions		2 (0)	
		Improve the condition of the pavilions		1 (0)	
Others	Content	The show should be more marketing oriented		1 (0)	
	Prior publicity	Improve prior publicity to increase farmer attendance of Seed Fair		1 (0)	
	Better preparation	Improve preparations for the show		1 (0)	
		Regularly	Seed Fair should be organised annually	1 (0)	
	Funding	Seed Fair should be organised twice per year			1 (0)
		The Nanenane show should continue		1 (0)	
		An entry fee to the grounds should be charged to raise funds for improvement of the grounds' infrastructure		1 (0)	
Grounds	Improve the grounds infrastructure		2 (0)		
Journalist	Widen stakeholder representation	The number of people attending the Seed Fair should be increased	1 (1)		



**NETWORKING & TECHNOLOGY TRANSFER CATEGORY – How to IMPROVE the seed fair responses**

Stakeholder group	Topic	Comments	No. of respondents saying this (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers	Collaboration	Improve (make functional) the collaboration between farmers and research especially with regards to seeds	2 (0)	3 (0)	
		Extensionists/Researchers should visit farmers		1 (0)	
		Validation research on exhibited items should be done and feedback given to farmers	1 (1)		
		Research should verify efficacy of the botanicals and give useful recommendations.			3 (0)
		Research should be done to improve the traditional crop varieties which should then be returned to the farmers.			1 (0)
		Research and Extension and others should use the Seed Fair for technology dissemination/ promotion	3 (0)		
		Validation research should be carried to clarify issues			1 (0)
		Feedback on research on the exhibited traditional fertilizers			1 (0)
	Exchange	Seed exchange between farmers	1 (0)		
		It should be complemented with farmer exchange visits	1 (1)		1 (0)
	Sale opportunities	Oil extraction machines should be available for sale	1 (0)		
		Avail improved seed for sale	2 (1)		
		Seeds should be available for sale	2 (0)		
	Seed bank	Seed bank should be initiated within the village	1 (0)		
	Training	Training on grain storage	1 (0)		
		Researchers and extension staff should attend the Seed Fair and they and others should conduct some training.	3 (0)		
		Training and technology promotion should target the youth.	1 (0)		
		The show should be complemented with training/ seminars		2 (1)	1 (1)
	Information	Information/learning materials for crops management.	1 (0)		
		Information on harvesting and storage	1 (0)		
	Leaflets	Leaflets/ booklets should be available at reasonable prices.	1 (0)		
	Demonstration	Enhance demonstration of the sunflower oil press	1 (0)		
	Tour	To be able to see new seeds, farmers should have a conducted tour of the show		1 (0)	
Widen Stakeholder representation	Number of farmers participating and exhibiting in the show should be increased		3 (0)		
	Improve participation of different sectors in the show		1 (0)		

**NETWORKING & TECHNOLOGY TRANSFER CATEGORY continued – How to IMPROVE the seed fair responses**

Stakeholder group	Topic	Comments	No. of respondents saying this (no. who were female)			
			Malinzanga	Mbeya	Shinji	
Farmers continued	Doing	Implementing the things that have been learnt from the Seed fair			1 (0)	
	Uniform	Farmer group members involved in the fair should wear uniforms			1 (1)	
Extensionists	Sale opps.	Some of the exhibited items should be available for sale		1 (0)		
	Leaflets	Increase number of leaflets being distributed		2 (0)		
	Video	Enhance use of video shows		1 (0)		
	Farmer participation	Increase exhibition by farmers		1 (0)		
	Widen stakeholder representation		Different stakeholders should be involved in the planning of the show including farmers		1 (0)	
			District councils should facilitate more farmers to attend the show.		1 (0)	
			Research institutions from other zones should also participate in the exhibitions		1 (0)	
Researchers	Messages	Institutions exhibiting similar technologies should coordinate to avoid giving contradicting information to farmers.		1 (0)		
		Separate the pavilions promoting technologies from the social and trade ones.		1 (0)		
	Sale opps.	Enhance exhibition of affordable machinery/equipment.		1 (0)		
	Farmer partic.	Farmers' representatives from the districts should be given a chance to give their views of the show.		1 (0)		
	Leaflets		Leaflets should be more pictorial and colourful.		1 (0)	
			Increase number of leaflets being distributed.		1 (0)	
			Informational materials should be paid for to ensure that those who take them value them.		1 (0)	
Widen		Participation by a broader range of stakeholders	1 (1)			
Trainers	Collaboration	Researchers/ Extensionists should show that they value farmers' contributions	1 (0)			
		Farmers should be assisted with production technologies and inputs.			1 (0)	
	Exchange	Exchange visits between farmers should be organized as follow-up to the Seed Fair to ensure feedback is given.	1 (0)			
NGOs, CBOs, FBOs	Sustainable	Research and Seed Fair should be sustainable/continuous process.	1 (0)			
	Demonstration	Exhibition should include demonstration plots.	1 (0)			

**NETWORKING & TECHNOLOGY TRANSFER CATEGORY continued – How to IMPROVE the seed fair responses**

Stakeholder group	Topic	Comments	No. of respondents saying this (no. who were female)			
			Malinzanga	Mbeya	Shinji	
NGOs, CBOs, FBOs	Communication	Communications facilities like and information centre and internet access should be available within the grounds.		2 (0)		
	Content	Non-agricultural shows/activities are distracting farmers from the agricultural ones.		1 (0)		
	Content	Prior identification by stakeholders of farmers needs which should be addressed at the show.		1 (0)		
	Sale opportunities	Exhibited materials available in sufficient amounts for sale			1 (0)	
		Botanical insecticides being exhibited should be available in large quantities so that people can buy after the show				1 (0)
		Bean varieties from Uyole should be available for dissemination to farmers				1 (0)
	Posters	Number of posters available for distribution should be increased and the quality improved.		1 (0)		
	Leaflets	Pamphlets/Leaflets should be more pictorial.			1 (0)	
		Increase the number of informational materials/leaflets with simple language.			1 (0)	
Widen stakeholder representation	Farmers should be facilitated to attend the show to learn the different technologies			1 (0)		
	Increase the participation of innovative farmers in exhibiting			1 (0)		
Others	Sale	Sufficient amounts of seed should be available for sale		1 (0)		
	Information	Information about agricultural production should be improved		1 (0)		
	Training	Training of representative farmers from different villages			1 (0)	

**SEED CATEGORY – How to IMPROVE the seed fair responses**

Stakeholder group	Topic	Comments	No. of respondents saying this (no. who were female)			
			Malinzanga	Mbeya	Shinji	
Farmers	Freebies to test	Sample seeds should be given for farmers to try out	1 (1)			
	Seed bank	Seed bank should be initiated within the village	1 (0)			
	Seed exchange	Seed exchange between farmers	1 (0)			
	Training	Training on seed production		1 (0)	1 (0)	
		Training on how to select seeds			1 (1)	
		Training on grafting of fruit trees seedlings		1 (0)		
Devote more time to techniques for improving seed quality				1 (1)		

**SEED CATEGORY continued – How to IMPROVE the seed fair responses**

Stakeholder group	Topic	Comments	No. of respondents saying this (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers continued	Info on varieties	Information on suitability of the improved bean varieties to the hot low rainfall areas	1 (0)		
	Collaboration	Research on improved seeds	1 (0)		
		Research should be done to improve the traditional crop varieties which should then be returned to the farmers	1 (0)		4 (1)
		Researchers should work closely with farmers especially with regards to seeds		1 (0)	
	More research	Promote early maturing crop varieties (as rains are insufficient in the area).	7 (2)		
	More seeds	Display maize seed suited for warm low rainfall areas	1 (0)		
		Promote early maturing sweet potato varieties	1 (0)		
		Increase variety of improved seeds exhibited	4 (0)	1 (1)	
		Increase the variety of traditional seeds exhibited			1 (0)
		Promotion of suitable cassava varieties	1 (0)		
		Exhibit new seed of sunflower	1 (1)		
		Exhibit new seed of pumpkins	1 (1)		
		Exhibit improved seed of maize	2 (1)		1 (0)
		Promote and avail improved sorghum seeds	1 (0)		
		Fruit types exhibited to include those suitable for diff. climates		1 (1)	
		Increase number of vegetable seeds on display		1 (1)	
		Sale opps	Seeds should be available for sale	2 (0)	
	The improved seed exhibited should be available for sale		6 (2)		1 (0)
	The sweet potato planting material should be available for sale		1 (0)		
	Appropriateness	Condition of the seed should be as in the village.		1 (1)	
Layout	Improve layout so those exhibiting seeds are together		1 (0)		
Tour	Farmers should have a conducted tour of the show to see seeds		1 (0)		
Local Govt	Collaboration	Traditional seeds should be improved			1 (0)
	Sale opps	The exhibited improved seed should be available for sale	1 (1)		
NGOs, CBOs, FBOs	More seeds	Rare crop types should be exhibited			1 (0)
	Sale opps	Uyole bean varieties should be available for sale to farmers			1 (0)
Others	Collaboration	Improve traditional seeds			1 (0)
	More seeds	Increase the number of improved seeds exhibited	1 (0)		
	Sale opps	Sufficient amounts of seed should be available for sale.		1 (0)	

**POST HARVEST & PROCESSING CATEGORY – How to IMPROVE the seed fair responses**

Stakeholder group	Topic	Comments	No. of respondents saying this (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers	Oil processing	Avail more oil extraction machines	5 (2)		
		Display diesel engine powered sunflower oil presses	2 (0)		
		The exhibited oil press machines should be available for sale	3 (1)		
	Storage	Information on harvesting and proper grain storage	2 (0)		
		Training on grain storage	1 (0)		
		Appropriate pesticides for grain storage should be exhibited, promoted and available for sale	3 (1)		
		Test samples of pyrethrum for grain storage should be provided	1 (1)		
Manual grinding	Hand operated grinding machines			1 (1)	
Researchers	Affordability	Enhance exhibition of affordable machinery/equipment		1 (0)	

**PEST & DISEASE CATEGORY – How to IMPROVE the seed fair responses**

Stakeholder group	Topic	Comments	No. of respondents saying this (no. who were female)		
			Malinzanga	Mbeya	Shinji
Farmers	Researcher validation	Researchers should validate efficacy of botanical insecticides and give feedback and recommendations	3 (0)		3 (0)
	Access to botanicals	Promote and provide access to the botanical insecticides with proven efficacy (ie test samples of pyrethrum)	3 (0)		
	Storage pesticides	Pesticides for grain storage should be exhibited and promoted and available for sale	3 (1)		
	Increase botanicals	Increase the variety of botanical insecticides exhibited			1 (0)
NGOs, CBOs, FBOs	Access to botanicals	Ethno-botanical insecticides being exhibited should be available in large quantities so that people can buy after the show			2 (0)

#### **Appendix 4. Key issues identified by a group of participants at the Southern Highlands Maize Innovation System Stakeholder Workshop following their discussion of the seed fair evaluation survey data**

The group observed that although these were seed fairs, participants showed diverse interests. The survey results also indicated that there were differences in needs between the groups.

##### **1. Needs**

- The male and female farmers at both Malinzanga, Mbeya and Shinji wanted to learn more about crops and seed. Management of pests and diseases was the third need of these farmers.
- Researchers and technicians wanted to learn more about networking and technology. This was more apparent at Mbeya where the numbers of researchers and technicians' responses were higher than in the two villages. On the other hand results show that the number of researchers and technicians at seed fairs conducted at village level was low.
- The needs for extensionists, NGOs, CBOs, trainers and local government overlapped. They needed to learn more about networking and technology.
- Other groups needed to learn more about crops and seeds.

##### **2. The group observed that results showed a few things on the seed fair process**

- Improvement on organisation was required.
- Some of the improvements required included presence of service providers to offer services at seed fairs.
- Numbers of women respondents was low. It was suggested that women needed to be attracted to seed fairs. It is noted however that the number of responses is not indicative of the number of women that participated at the seed fair. Some of the women were shy and refrained from being interviewed.
- Results indicated that seed fairs are suitable forums for provision of crops, seed, pest management and non-seed issues.

##### **3. Recommendations/ suggestions on methodology**

- Sample size for some of the groups was too small
- Mbeya site was different from the other two which were villages, hence comparisons would not be appropriate.
- Data needs to be analysed mainly in terms of improving services to farmers
- Consider analysing the data using the SPSS programme