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Assessment of smallholder seed groups performance and market linkages in Southern Malawi

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Executive Summary

ICRISAT in partnership with the Rural Livelihoods Support Project was implementing a two year project since 2009 to promote production of groundnuts and pigeon peas in Chiradzulu and Thyolo districts. The project was providing start-up seed of improved pigeon peas and groundnut varieties and technical advice. The variety received for pigeon peas was ICP40 while for groundnuts farmers were given Nsinjilo and CG7. The groups were multiplying the seed and sharing the seed on pass-on scheme. This study was thus conducted to assess the performance of the smallholder seed groups and explore opportunities for linking with the market for seed through the agro-dealer network and other initiatives as marketing outlets for seed. The study methodology involved interviews with selected agro-dealers operating in the project area and focus group discussions with selected farmer groups involved in seed multiplication. In total the study involved nine community seed groups, six in Chiradzulu district and three in Thyolo district and three agro-dealers (2 from Chiradzulu and one from Thyolo). The groups were clear of their objectives to multiply seed to increase access to seed within their communities and engage in small scale seed business. The outcome of these activities would be increased production of pigeon peas and groundnuts and improved livelihoods and incomes. The membership composition for the visited groups shows that most groups were involving more women than men. This means that women were being actively engaged in seed multiplication for the legumes as such they would be primary beneficiaries of the accrued benefits of the project support. Community members joined the groups on voluntary basis based on their willingness to participate in growing the crop. The project provided training to some of the groups in Chiradzulu and in Thyolo. But some groups did not yet receive training. For the groups that received training, the training mainly comprised of crop management aspects. For most groups, the seed support was received once when they started in 2009 and they have been able to multiply it and pass on to others and realized some excess seed for sale. Most of the groups had been able to realize some significant and increasing harvest in the two years so that other farmers have also benefited from the produced seed including sale of excess produce by some groups. For example, Nankuyu group (a group of 20) in Chiradzulu district produced 500kg of pigeon peas in 2009/10 season and increased to 1000kg in 2010/11 season. A number of other farmers also benefited from the produced seed as the groups have been able to share the seed with other farmers thereby expanding access to improve seed of both groundnuts and pigeon peas. This means that the objective of increasing access to seed to other needy farmers was being realized through these groups. The study has highlighted a number of challenges faced by the groups during the two years which affected their production levels. These included lack of training and extension services; late distribution of seed by the project; poor weather; occurrence of pests and diseases; and poor storage condition and storage pests for both pigeon peas and groundnuts. The groups also faced a number of marketing challenges which included: low production limiting the amount for sale; no linkage with reliable and competitive markets; lack of information on profitable market opportunities; high transport costs to markets in the city; and poor road network The seed groups have not yet had any interactions with agro dealers in the area or any other organized seed marketing organizations. However the interviewed agro-dealers are eager to link up with the seed groups to purchase from them the seed and sell in their input retail outlets as long as the seed is of good quality and prices are not exorbitant. The main constraints affecting the seed trading for the agro-dealers include: lack of adequate capital to buy seed stock and run their business; high transport costs; and competition with

large seed companies. The groups indicated that the market available is mostly for grain and not seed as the local seed market is not developed and linkages are not yet developed. Apart from selling to vendors and local markets, some groups (e.g. Nankuyu group) have been able to explore and link up with larger buyers with support from ICRISAT. They have been able to sell their grain produce for pigeon peas collectively to Export Trading in Blantyre with assistance from the project and this has helped them to realize better returns. Overall the groups have not been very successful as smallholder seed producing groups. The ICRISAT support may have provided the start-up seed and increased access to good seed for the targeted communities but the groups were not systematically developed and supported to become sustainable seed producing groups. The main reasons include lack of or inadequate training on seed production and government standards and requirements for seed production. Almost all farmer groups interviewed from the two districts indicated that they are not aware of the requirements for seed production as prescribed by either government or seed companies. There is need to link the farmer groups in the project area to organizations which focus on producing and marketing improved seeds in tandem with requirements for seed production as prescribed by either government or seed companies. This can be attained if the farmer groups are linked to organizations such as Association of Smallholder Seed Multiplication Action Group (ASSMAG). The project supported groups can get organized into Seed Multiplication Action Groups (SMAGS) in the districts or join the existing SMAGs and access marketing linkages that has already been developed. ASSMAG works collectively through groups at different levels and ASSMAG coordinates production trainings, seed certification activities, seed processing and seed marketing-related issues of all the member groups. This would be of benefit to the farmer groups in the project area. To achieve maximum benefits and ensure sustainable small scale seed groups the following needs to be taken into consideration: Training of farmers on group dynamics, production technologies and practices; Facilitation of governance issues for sustainability; coordinated effort on marketing; sourcing of foundation seed and distribution to farmers; organizing inspections and seed testing.

Keywords: Small holder, Market linkages, Seed groups, Agro-dealers

JEL classification: Q130, Q120

Contents

1 Introduction

ICRISAT in partnership with the Rural Livelihoods Support Project has been implementing interventions since 2009 to promote production of groundnuts and pigeon peas in Chiradzulu and Thyolo districts. In Chiradzulu, the interventions have been implemented in Thumbwe EPA (Perenje, Tchoda, Mapesi, Mtamba and Litchenza sections). In Thyolo, the interventions have been implemented in Masambanjati EPA (Nambira section) and in Thekerani EPA (Kanjedza A, Kanjedza B and Mbawera section).

The objectives of the interventions were:

- To create awareness among farmers on the availability of new varieties of groundnuts and pigeon peas
- To empower farmers to participate in selection of suitable varieties of groundnuts and pigeon peas for their area
- To increase availability of and access to seed of new varieties of groundnuts and pigeon peas
- To improve food security and income levels of beneficiary households through increased production and sales of surplus production.

For the last two objectives relating to seed multiplication, the farmers were operating in two models either as a collective community seed production group or as a farmer's club comprised of individual farmers. The project through ICRISAT was providing start-up seed and technical advice. The groups were multiplying the seed and sharing the seed on pass-on scheme. One way of promoting sustainability for the groups beyond the project is for the group to link up with the market in an organized fashion so that they can sell excess produce either as seed or grain. A study was thus conducted to assess the performance of the smallholder seed groups and explore opportunities for linking with the market for seed through the agro-dealer network supported by AGRA as a marketing outlet for seed.

The study was specifically looking at the following aspects:

1. Assess the performance of two models of seed supply used by the Treasure Legumes project (community seed production and farmer clubs) for production of pigeon pea and groundnut seed.
2. Assess the performance and relevance of AGRA's system of supporting agro-dealer networks.
3. Assess the scope to integrate these models into the agro-dealer network supported by AGRA, and the conditions that need to be met for seed producers to link with agro-dealers.

2 Data and methods

The study methodology involved interviews with selected agro-dealers operating in the project area and focus group discussions with selected farmer groups involved in seed multiplication.

Four agro-dealers were interviewed individually in Chiradzulu (3) and Thyolo (1). The Agro dealers were selected from the database of agro dealers who were trained under the Alliance for a Green Revolution in Africa (AGRA) funded project in support for the strengthening agro-

dealer network called Malawi Agro-dealer Strengthening Program. The project was implemented in Malawi by CNFA in collaboration with Rural Market Development Trust (RUMARK). The project strengthened Malawian agro-dealers by providing training in business management and productive farming methods. The agro-dealers were also been trained in safe product usage and handling, product knowledge and crop husbandry practices, thus allowing them to not only provide inputs to smallholder farmers, but also to share knowledge on improved production practices through nearly demonstration plots. As a result RUMARK in collaboration with CNFA certified over 1,500 agro-dealers in business management throughout the country. The certified agro-dealers underwent through a six-module business management training program that included managing working capital, managing stocks, costing and pricing, selling and marketing, record keeping, and managing business relationships. The three agro-dealers interviewed were those trained and operating in the ICRISAT project areas.

In total the study involved nine community seed groups, six in Chiradzulu district and three in Thyolo district. Three groups were involved in pigeon peas while six groups were engaged in groundnuts seed multiplication.

The groups were set up originally in two modes. One model was on community seed bank where a group was given seed to multiply as a group and then harvest into a community seed bank. The harvested seed was distributed to members to grow individually while the remaining seed was sold by the group. Those who received seed would return some produce after harvest to the group seed bank for passing on to other members. The second model was on farmer club whereby a group of farmers were given seed as individuals belonging to a club. After harvesting the members would return some seed to the club and the club would give to other new members on a pass-on scheme. Members joined the groups based on their interest to participate in growing the two legume crops and their need to access seeds of the improved varieties. After the first season, most groups operated as individual farmers belonging to a group/club with not much difference based on how they started. The selected groups were a mixture of the two models with 5 which started on a community seed bank model and 4 as farmer clubs.

3 Results and discussions

3.1 Assessment of performance of the farmer groups

All the sampled groups highlighted that they were aimed at multiplying the seed given by ICRISAT to increase access to seed for the community through pass-on scheme[1].The groups were to produce quality declared seed which they can share with other farmers in the community. The excess produce could only be sold as certified seed after passing through field inspection and seed testing by the government Seed Services Unit. Otherwise the groups could just sell within their community to fellow farmers as seed or as grain through local

[1] Pass-one scheme is when farmers obtain startup inputs (e.g. seed) on loan to grow and after harvest they return to the group the amount of seed borrowed (plus some additional seed as interest) and this seed is passed on to new deserving members of the group on the same arrangement. Through the scheme, more community members benefit from the inputs through passing on to others. This scheme is also applied in livestock promotion e.g. goats.

market channels. In addition they were working at producing more to sell some excess seed or grain to raise incomes for the groups and for individual members. The outcome of these activities would be increased production of pigeon peas and groundnuts and improved livelihoods and incomes. Some groups also indicated that they were involved in a process of testing varieties of pigeon peas and ground nuts to find suitable varieties for the area. The groups therefore clearly understood the objectives of their establishment as per objectives of the project.

Table 1 below shows the membership composition for the groups sampled in the study.

Table 1: Group Profiles

District	**Chiradzulu**					
Group Crop	Nkhuku pp[a]	Nankuyu pp	Perenje gn[b]	Namoche gn	kholomana gn	Ntambalika gn
Males	2	2	0	6	3	4
Females	4	18	12	17	12	12
Year established	2009	2009	2009	2009	2009	2009
Total Production 2009	0	500	210	320	300	800
Total Production 2010	0	1000	250	0	200	500
Pass-on beneficiaries	0 (0%)	20 (100%)	19 (158%)	23 (100%)	47 (313%)	41 (256%)
	Thyolo					
Group Crop	Mchenga pp	gn	Tiyese gn	kozaalendo gn		
Males	5		3	5		
Females	13		3	13		
Year established	2009	2009	2009	2009		
Total Production 2009	90	150	13	90		
Total Production 2010	100	200	15	100		
Pass-on beneficiaries	18 (100%)	18 (100%)	6 (100%)	18 (100%)		

Notes: [a] pigeon peas; [b] groundnuts

The membership composition for the visited groups shows that most groups were involving more women than men. This means that women were being actively engaged in seed multiplication for the legumes as such they would be primary beneficiaries of the accrued benefits of the project support. Community members joined the groups on voluntary basis based on their willingness to participate in growing the crop, availability of land and the amount of seed provided by the project and this resulted in varying numbers in different groups.

All the sampled groups except one indicated that since their establishment in 2009, they have been keeping records of their activities in terms of membership, production and other relevant information about their seed multiplication enterprises. The study could not verify the records being kept by the interviewed groups as focus group discussions were done at a central area away from the houses of the ones that keep records.

The groups in the two districts were given improved seed varieties of groundnut and pigeon peas to multiply. All the groups received some seed input from the project either for groundnuts or pigeon peas depending on their need. For most groups, the seed support was received once when they started in 2009 and they have been able to multiply it and pass on to others and realized some excess seed for sale. The variety received for pigeon peas was ICP40 while for groundnuts farmers were given Nsinjilo and CG7.

The project provided training to some of the groups in Chiradzulu and in Thyolo (half of the groups interviewed in Chiradzulu and one group of the three interviewed in Thyolo). But some groups did not yet receive training. For the groups that received training, the training mainly comprised of crop management aspects.

All the sampled groups in the two districts seemed to have grown the initial seed received as a group and then thereafter they shared the seed and grew it as individuals on pass-on scheme. The groups had different sizes of land put into use for the purpose of the project. This varied due to number of members and amounts of seed that were given to the different groups. The groups still operated as a group even after sharing the seed because those who received the seed on pass-on had to return the seed to the group for passing on to other new members and for group marketing of the excess. The group members who produced more were bringing together their produce for group marketing.

Most of the groups had been able to realize some significant and increasing harvest in the two years so that other farmers have also benefited from the produced seed including sale of excess produce by some groups. For example, Nankuyu group (a group of 20) in Chiradzulu district produced 500kg of pigeon peas in 2009/10 season and increased to 1000kg in 2010/11 season. Another group in Thyolo district called Mchenga in the first year produced 150kg of groundnuts and in the second year increased to 200kg shelled groundnuts. For some other groups their production levels had not increased in the two years due to a number of production problems including erratic rainfall. The production levels for both groundnuts and pigeon peas however seem to be low for most groups in comparisons with the area planted and expected yield. Discussions with the groups reflected poor production systems and the reported erratic weather conditions (dry spells) which affected performance of their crops.

A number of other farmers have benefited from the produced seed as the groups have been able to share the seed with other farmers thereby expanding access to improve seed of both groundnuts and pigeon peas. All groups interviewed in Chiradzulu except one had shared out the produced seed to other farmers in the area. On the other hand all the three groups interviewed in Thyolo had shared out seed. For example in Kholomana group in chiradzulu with group membership of 15 people, 47 people have benefited from the seed produced by the group. The trend has been the same for most of the other groups. This means that the

objective of increasing access to seed to other needy farmers was being realized through these groups.

The groups visited highlighted a number of challenges they faced during the two years which affected their production levels.

1) Most of the visited groups indicated that they did not receive training except for three groups out of nine groups visited. They needed training on seed production and crop management. Some group members did not even know the varieties they were growing with support from the project. The seed varieties were new to the most beneficiaries and these farmers did not have necessary knowledge on how to handle the new varieties and this was made worse by lack of extension services or technical advice. The training was supposed to be provided by Ministry of Agriculture extension officials at the start of the season after group formation in collaboration with ICRISAT. However due to late arrival of seed and shortage of extension staff, some groups were just given seed without training.

2) The seed was distributed late to the beneficiaries as indicated by the members of some farmer groups in the two districts. This late distribution of inputs also was coupled with erratic rainfall and poor crop management. This led to low production of the crop and poor quantity and quality of seed produced. Most groups received the seed from the project only in the first year. However some groups whose first year crops failed due to poor rains were given seed again in the second year.

3) The two district experienced erratic rains during the 2010/11 season as reported by the sampled groups. This contributed to low production and poor quality of the produce both for seed and grain. The reduced production limited the amounts of seed to pass-on to other beneficiaries who needed the seed as some farmers were not willing to pass-o to others as per requirements.

4) Some crops also suffered from pest and disease attacks thereby affecting production.
All the groups in the two districts indicated that their storage facilities are unconditioned. Almost all groups' sun dried their crops and groundnuts is mostly stored unshelled in bags to protect from weevils, rodents, moisture and to save labour while for pigeon peas the grain is stored in bags. There were two groups who indicated that they store shelled groundnuts in bags for easy handling and fumigation. When storing the produce there is no grading and the varieties are mixed though in some groups it was indicated that they store separately. Most groups (except two in Chiradzulu and one in Thyolo) indicated that they had not used chemicals when storing the produced seed.
There were some notable losses due to poor storage condition and storage pests for both pigeon peas and groundnuts. The farmer groups face a number of challenges when storing the produce and these include; rodent damages, theft by children especially for groundnuts, weevils, poor storage facilities leading to rotting due to moisture and lack of chemicals for treatment. This is an area which may require more attention in terms of training of the groups on appropriate storage methods and technologies.

3.2 Marketing activities for the Farmers Groups

In Chiradzulu, two of the four groundnuts groups visited sold out some of their produce as grain while two never made any sales. For the two pigeon pea groups visited in Chiradzulu, one sold some produce while the other did not sell any. This was sold as grain and not seed. None of the visited groups in Thyolo sold the produced seed or grain. The groups that sold had sold their produce as a group.

For the groups that some produce, the produce was mainly sold to vendors through local markets in the area within Chiradzulu district. The farmers however noted that there are other potential buyers of grain in the districts such as Mulli Brothers, ADMARC, Export Trading, Rab Processors and TransGlobe. However the groups have not established linkages with these buyers due to low production and lack of information on how to engage the buyers.

The farmer groups highlighted a number of marketing challenges they were facing. The challenges faced by Chiradzulu farmers included the following:

- Low production limiting the amount for sale
- no linkage with reliable and competitive markets – only vendors are readily available to buy their crops. However the vendors/ middlemen distort the market by offering low prices and influencing farmers to sell early
- Lack of information on profitable market opportunities
- High transport costs to markets in the city. The farmers in Chiradzulu have to sell their produce in Blantyre (>60km) and have to go and search for markets first and then hire transport to ferry the produce to the markets.

To deal with the challenges, the groups urged ICRISAT to assist in finding markets. They also felt that ICRISAT as a supplier of seed should buy the produce from the groups and supply other groups. This will assist the groups to sell their seed at high price and realise benefits from the seed enterprise.

As for the farmers in Thyolo the challenges related to marketing included the following:

- Low production - low quantity and quality of produce limited amount for sale
- Poor access to the area – Thekerani area is very remote (>100km from Blantyre) and has poor road network thus making marketing activities less competitive. As a result of poor transport network, there are few vehicles going to the area and transport costs are very high. Transport cost for a person to travel to Blantyre is in excess of MK1000 for a distance which would cost MK300 if the road was good. Lack of knowledge and skills on marketing among the group members
- Lack of information and knowledge on market opportunities
- No linkage with organised and profitable marketsTo support the groups to grow as seed growers, the groups recommended that the project or other NGOs should buy produce from the group or assist in securing markets for the groups.

The groups indicated that the market available is mostly for grain and not seed as the local seed market is not developed and linkages are not yet developed. Apart from selling to vendors and local markets, some groups (e.g. Nankuyu group) have been able to explore and link up with larger buyers with support from ICRISAT. They have been able to sell their grain

produce for pigeon peas collectively to Export Trading in Blantyre with assistance from the project and this has helped them to realise better returns. Quality requirements of the company were not a problem for farmers. They were informed beforehand and organized their crops accordingly.

The club got in touch with Export Trading through ICRISAT and agreed that the company would buy from the marketing club and also to which price. After harvest, farmers stored their crops at their own homes. They then hire a truck to transport it to the company and the day when the truck would come was announced to the members until then, members needed to register with the extension officer how much they want to sell. The day the truck came, every farmer brought the registered quantities to the collection point in the village. The extension officer accompanied the truck to the company, got paid and came back to the village the same day to pay the farmers. Transport costs were partly paid by farmers and partly by ICRISAT.

The groups reckon that there are benefits from marketing as a group with organised buyers. First of all farmers were able to access a new buyer, who offers higher prices than the vendors to whom farmers sold earlier. Thus they increased their returns. Second, farmers used to sell their pigeon peas piecemeal to vendors, when they were in need of cash. They spent the cash on daily needs and were not able to accumulate cash for bigger expenditures as school fees. However, in the club, they bulked their harvest and sold it at once. This helped them to accumulate money to pay bigger expenses. Due to the positive experiences, farmers are interested to sell their crops through this way.

The groups however reckon that there is potential to gain higher returns by selling seed if production is boosted and market linkages are established.

3.3 Seed production and access

Almost all farmer groups interviewed from the two districts indicated that they are not aware of the requirements for seed production as prescribed by either government or seed companies. This has been contributed by lack of training, technical skills, market information, knowledge and business skills in seed industry.

Hence there is need to link the farmer groups in the project to organizations which focus on producing and marketing improved seeds in tandem with requirements for seed production as prescribed by either government or seed companies. This can be attained if the farmer groups are linked to organizations such as Association of Smallholder Seed Multiplication Action Group (ASSMAG). If the seed groups are coordinated through ASSMAG, agro dealers would be more willing to source the seed from these groups without having fear of getting poor quality seed from the farmer groups.

Farmers who participated in the project clearly indicated that they benefited through access to improved seed varieties of pigeon peas and groundnuts from the project. The seed was able to reach more people in the area through the pass-on scheme. Some farmers managed to produce more and sold out some produce in form of grain and realised some income from the produce. It was further indicated that households had improved access to food with nutritional benefits due to increased availability of groundnuts for food at home.

Most of the groups however felt that their expectations were not met through the model. Some few (3) indicated that their expectations were partly met by the project. Their expectations from the participation in the project included the following:

- high yields and increased production,
- increased production of seed,
- to keep more seeds in seed bank for group sales.
- timely support to link with reliable markets,
- more seed types and other farm input support,
- to receive training on seed production,
- increased incomes and livelihoods due to sale of produce either as seed or grain,
- increased group membership and

However, despite their importance as well as the availability of new varieties for the two legumes, farmers' adoption rates and productivity remain low. This is mainly due to production, storage and marketing challenges faced by the farmers. Addressing these constraints is extremely important if we are to harness the untapped potential of legumes and this requires the setting up of institutional arrangements and partnerships that improve the local availability and utilization of improved technologies and effective market linkages that offer stable and better prices to producers.
According to groups visited, the general performance of most groups has been described as poor. This has been so due to a number of challenges faced relating to production, storage and marketing.

The smallholder seed groups visited in the two districts identified a number of strategies that could assist in ensuring sustainability of their activities after project support. Among the strategies are the following;

- The groups would require training on seed production techniques and associated requirements including how to source new varieties.
- The groups would require training on group dynamics including their roles and responsibilities so as to establish solid groups.
- In an effort to increase production there is need to promote pass-on scheme to ensure more community members access seed in the area. This will help in increasing production and sale volumes.
- The group members should make financial contributions to support operations of the group such as searching for markets and buying new seed.
- Apart from contribution from the members, the groups identified the need to engage in value addition for seed and grain to raise more income. For seed this would include grading, treatment, packaging, labelling and marketing. For grain it would involve processing into different products and marketing them.
- The groups should institute levies from individual seed/grain sales proceeds when sold collectively through the group. This will help raise income for the groups operations.
- The groups envisage establishing properly coordinated linkages with competitive markets and production support systems such as extension and seed inspectors for quality seed products.

- The groups would also like to be assisted on financial capital and supported with farm inputs, pesticides and herbicides to fully engage as seed producers.

The groups' strategy in sustainability coincides with the ASSMAG strategy whereby it generates levies from the member's proceeds after sales based a rate charged on the volumes sold. On the other hand there is provision for training and inputs on loan which is recovered from the sales.

In regard to their view on the future sustainability farmer groups in both districts would like to get assistance in implementing these strategies.

Overall the groups have not been very successful as smallholder seed producing groups. The ICRISAT support may have provided the start-up seed and increased access to good seed for the targeted communities but the groups were not systematically developed and supported to become sustainable seed producing groups. The main reasons include lack of or inadequate training on seed production and government standards and requirements for seed production. The standards are enforced through inspections and testing by the Seed Services Unit of the Ministry of Agriculture. The standards and requirements include:

- Consideration of the history of the land – need for crop rotation
- Isolation distance for fields for seed (legumes – 5 meters; maize – 200-400m)
- Presence of off types in the field – less than 0.1%
- Germination percentage for the seed (legumes – 75%; maize – 90%)

Most of the groups were not aware of these requirements as such they were just producing for grain except for uncertified seed which they were sharing out or selling with community members within their area.

The groups also needed to be trained for engaging in seed business and marketing including value addition. Almost all the groups interviewed expressed their preference to engage in seed production and marketing because seed fetches higher prices than grain as such they would realise larger returns.

The groups also needed more strengthening in coordination and organisation through training and constant support and coaching. The groups were not well organised and some groups only operated as groups in the first year when they received project support but beyond that they were fairly disorganised and disintegrated.

3.4 Farmers Groups Market linkages with Agro dealers

In this assessment, four agro-dealers were visited (three in Chiradzulu and one in Thyolo district. These are the agro-dealers identified to be operating in the ICRISAT project areas. The agro-dealers were identified through the Alliance for Green Revolution in Africa (AGRA) funded Rural Market Development trust (RUMARK) which has been working to strengthen the agro-dealers through training and certification. The agro-dealers operate as small scale shop owners in the rural areas selling agricultural inputs and in some cases buying produce as sole proprietors. One of the agro-dealers interviewed in Chiradzulu was also a seed multiplier under ASSMAG as such he was selling own produced seed. All the agro dealers interviewed

were owner managers of their business with few or no additional labour and had between 3-4 years of experience.

All the four agro-dealers interviewed had some level of education with two completing secondary school level education while one had reached junior secondary certificate and the last one had completed primary education. This means that the agro-dealers were quite literate with high to medium level of understanding on their business transactions as well as agro-inputs requirements.

Three of the agro-dealers interviewed were exclusively doing business in agricultural products (100%) while one was also involved in selling other grocery items as such he estimated the agricultural commodities share to be 50%. All the interviewed agro-dealers were RUMARK certified agro-dealers and had received some training in handling agro-inputs such seeds and agrochemicals including some basic agricultural and marketing skills. This training was provided by RUMARK in collaboration with Citizen Network for Foreign Affairs (CNFA) over the past two years. There was some general satisfaction among the agro-dealers on the training they received in helping them to operate their business although some needed more training and capital support after the first trainings.

The agro-dealers also felt that the certification by RUMARK was assisting them to get recognition, trust and linkages among seed and chemical companies so that some were being given inputs on credit. They also felt that the training and certification assisted them to network among themselves and gave them confidence to improve their agro-dealer business. However, it was noted that only two of the four had government business trading license. The other two were just operating using the agro-dealer certification as enabling them to operate a local business.
Three agro-dealers used external support/input for start-up capital while one used own capital. Two of the agro-dealers obtained cash loans from micro-finance providers while the other one received startup groundnuts seed from ASSMAG on loan. The financial input seems to be a one off intervention. Currently all are operating using own funds for running the business. This reflects the small scale nature of their businesses.

Three of the four agro-dealers were mainly selling maize seed of hybrid and open pollinated varieties which they obtain from seed companies through their establish networks. The seed companies include Pannar seeds, Seedco and Seedtech. Some have also sourced legume seed such as groundnuts and pigeon peas from the seed companies. In most cases they obtain the seed on credit and pay back after selling the seed. Their main market is the government supported input subsidy program. One of the agro-dealers was selling own produced seed in his shop as he was a member of ASMAG seed multiplication group. His plans were to open more outlets to service fellow seed multipliers under ASMAG as a retail outlet.

The agro dealers have not yet had any interactions with ICRISAT supported smallholder seed groups in the area. However they would be eager to link up with the seed groups to purchase from them the seed and sell in their input retail outlets as long as the seed is of good quality and prices are not exorbitant. One agro-dealer in Chiradzulu was already buying some of the seed (pigeon peas and groundnuts) he sells from local farmers produce. The farmers either

bring the crop to his shop or he buys through local markets. Table 2 below shows the agro-dealers knowledge and interaction of seed groups in their area and new seed varieties.

Table 2 Agro-dealers knowledge of and interaction with seed groups in their area

Agro-dealer	Awareness of improved ppea varieties	Awareness of improved gnut varieties	Interaction with community seed groups	experiences
Maxwell Kambele	No – only knows local and red early maturing variety	No – only knows chalimbana variety	no	NA
Kapito Saini	Yes – do not know varieties	Yes – CG7	No – except for fellow ASMAG seed farmers. He is ready to link up and sell or find market for seed from smallholder group in the area	NA
Mrs. Misenje	Yes – do not know varieties	Yes – do not know varieties	No – planning to start next season by buying their produce	NA
R. Chaduka	No	Yes – CG7, Nsinjilo, Manipintar, Chalimbana	yes	Seed quality is poor Low education limiting communication Farmers expected prices are too high

On the other hand one agro-dealer are also members of ASSMAG as such there may be marketing linkages with farmer groups that are involved in the ICRSAT project where by the groups need to be part of ASSMAG and deliver seed to the agro dealers under ASSAMG membership. This can be legitimized by being ASSMAG members for contractual arrangements with Agro dealers.

The main constraints affecting the seed trading for the agro-dealers include the following;

- Lack of adequate capital to buy seed stock and run their business
- High transport costs
- Competition with large seed companies

To deal with the challenges faced in their seed trading business, the agro-dealers made the following recommendations:

- The government should support the agro-dealers to get more access to credit from the finance providers
- To support small scale seed multipliers, the government should invest more in multiplying breeder seed so that smallholder seed multipliers should access good

quality seed to multiply and sell. Government should also improve on seed inspection services to support small seed multipliers to produce good quality seed. The government should train para- seed inspectors to support the few seed inspectors in the seed quality assurance work.

- Government should regulate competition from large seed companies competing with small scale seed farmers
- The agro-dealers need thorough knowledge on varieties and agro-chemicals to support farmers with basic information on how to use the varieties and other inputs. The agro-dealers also need to be trained on good communication skills to pass on information to farmers as they sell out the seed.

Since there are limitations on the agro dealer and farmer groups linkages, there is need to have sensitization on the agro dealers to recognize the existence of the farmer groups either through the project or through ASSMAG structure.

3.5 Potential for linking the smallholder farmer groups with ASSMAG

ASSMAG stands for Association of Smallholder Seed Multiplication Action Group. With assistance from government and donors, ASSMAG was established in 2001 with eight (8) affiliate associations which fall under eight (8) Agriculture Development Divisions (ADDs), forty nine (49) Seed Marketing Action Groups (SMAGs) with 2450 seed growers country wide of which 40% are women seed producers. Smallholder seed growers organized themselves into grass-roots groups, referred to as Seed Marketing Action Group (SMAG). Each SMAG is affiliated with to regional association in each of the eight ADDs and these associations are affiliated to the national body known as the Association of Smallholder Seed Marketing Action Group(ASSMAG). The national body coordinates seed production and marketing-related issues of all the member groups. ASSMAG was mandated to multiply and sell open pollinated variety (OPV) maize seed and some legume seeds. Recently ASSMAG has also expanded to disease free cassava cuttings, sweet potato vines, improved fruit tree seedlings and Agro-forestry seedlings.

The objectives of ASSMAG are to:

- To improve access to improved seed for poor farmers thereby assisting in increasing yield
- To contribute to food security
- To raise income status of smallholder farmers

Scope of ASSMAG operations centers on seed multiplication and marketing. ASSMAG buys basic seed from breeders (maize, groundnuts, soya) and distribute to its farmers for multiplication (on loan). The maize seed is mostly OPV maize but recently they have started bulking hybrid. Other crops involved in multiplication include beans, cowpeas, sorghum, millet, cassava and sweet potatoes. Other farmers also multiply fruit tree seedlings of all types. ASMAG also buys fertilizer and other inputs e.g. chemical supplies for the seed multipliers under its membership. ASSMAG is concentrating on OPV seed because many rural poor farmers prefer more OPV seed because they can be recycled. OPVs can be grown with less fertilizer and require less storage pesticides than hybrids. However ASSMAG is most of the times has to compete with large seed companies such as Monsanto and SeedCo. ASSMAG is also promoting growing of seed with organic manure to reduce dependency on expensive fertilizer.

The seed has to be inspected by government seed inspectors for it to be certified. The farmers have to register with the seed services unit before they can undertake inspection. The inspection is supposed to be done 3 times during the growing season (pre-season, mid-season and at harvest). The cost for inspection is MK4500/farmer/crop and each farmer pays on their own but ASSMAG organizes and facilitates the inspection process by making arrangements with government. After harvest, the inspectors collect samples for testing the seed at the research station in terms of germination percentage. The cost of testing is MK1000/crop/farmer.

ASSMAG also rents warehousing to process and store seed from its members to facilitate organized marketing. ASSMAG has been hiring a seed processing plant from Monsanto and SeedCo to process its maize seed (coloring, treatment and packaging) at a cost of MK18/kg. Currently, ASSMAG has acquired its own seed processing equipment. For legumes, ASSMAG has been processing on its own buy buying packaging materials and using their own stitching machine for sealing. ASSMAG sells its seed through different channels. These include the government input subsidy programe, through the agro-dealer network and directly to NGOs and organizations. ASSMAG is country wide as a seed distribution channel and its outreach is wider reaching more farmers. The association gets MK2/kg as levy for seed sales on behalf of farmers. The levy is used to support running of ASSMAG (20%), its affiliates (40%) and local SMAGs (40%). Table 3 below shows detailed cost structure for the ASMAG seed operations.

Table 3: Cost structure for ASSMAG seed operation, 2010/11

Item	Cost/value	Comment
Sales gross value Legumes (govt subsidy program) Legumes (other outlets) Maize (govt subsidy program) Maize (other outlets)	 MK400/kg MK200-400 MK225 MK80-150	ASSMAG in collaboration with SMAGs find markets and sell in bulk
Government tax	3%	Based on value of sales invoice
ASSMAG levy	MK2/kg	For management and support of SMAGs
Cost of seed (basic/foundation seed) ICRISAT – groundnuts Govt research (all seeds)	 MK380/kg MK350/kg	Deducted if seed given to farmers on loan
Distribution of seed to SMAGs/farmers	MK5/kg	Borne by ASSMAG
Registration with Seed Services Unit	MK1000/crop/farmer	Deducted from sales
Inspection costs (pre-season, mid season and at harvest)	MK4500/ha/year	Deducted from sales
Seed sampling and testing for certification	MK1000/crop/farmer	Certificate issued per individual farmer Deducted from sales
Cost of warehousing by ASSMAG	MK100-1000/sq meter	Depending on location of warehouse Deducted from sales
Packaging costs	MK10/kg	Deducted from sales

Labour for packaging, stacking, loading	MK1/kg	May depend on quantity Deducted from sales
Cost of transport from warehouse to markets	MK28/ton/km	Standard transport rates Deducted from sales Processing plant in Lilongwe to ensure uniformity of standards
Estimated gross value paid to the farmer	75%	
Other costs borne by the farmer	25%	
• Labour related activities:		
○ Land preparation	MK6000/ha	
○ ridging	MK5000/ha	
○ planting	MK4500/ha	
○ weeding	MK5000/ha	
○ banking	MK5000/ha	
○ chemical application	-	
○ harvesting	-	
○ shelling	-	
○ grading	-	
• Fertilizer	-	
• Chemicals	-	
• Preliminary packaging	-	
• Preliminary warehousing	-	
• Transporting to central warehouse	-	
Estimated Net to the farmer	50% of sales value	

Figures relate to 2010/2011seed growing season and the 2011-12 seed marketing season. (Source: Interview with Mr. Nessim Nyama – Marketing Coordinator for ASSMAG))

ASSMAG considers training of seed growers as a compulsory step and a continuous process as such it uses funds from the levy and other donor funds to facilitate such training. To support functioning of the SMAGs, ASSMAG regularly monitors and supervises the affiliate associations and SMAGs and also facilitates governance of the associations and SMAGs e.g. election of office bearers.

Other players in the seed industry include Monsanto, SeedCo, SeedTech, Pannar seeds, Chemicals and Marketing (Pioneer), Funwe farm, and Demeter (OPV and legumes). There is a seed traders association which is supposed to interface with government on policy matters and regulate the seed market. ASSMAG is a member of the seed association. Average production level of ASSMAG is 20% of the total national seed production which comprises entire membership of Seed Traders Association of Malawi, but its market share is currently 10%.

There a number of activities that has made ASSMAG to stand out. These among other include continuous donor support on training for the member farmers annually on seed production technologies and practices. ASSMAG provides seed production information and procedures to its members annually. Organize Seed Services Unit Officers to inspect farmers' seed fields.

ASSMAG conducts its own general supervision visits to the fields and strengthen the committees at SMAG level through governance trainings. In terms of governance ASSMAG has elections based on the term of office and elections are held at all levels. There is constant communication to and from the farmers within ASSMAG structure.

So far, according to ASSMAG officials interviewed, finding markets and marketing seed has not been a problem. The main challenges ASSMAG faces relates to lack of adequate funds to buy basic seed for the members, to pay for inspection and testing of seed and to facilitate governance of the association. The other problem is that farmers sell the seed elsewhere (e.g. to other traders) before the seed is collected by ASSMAG for processing. The farmers want cash immediately as such find it hard to wait for ASSMAG processes. If the association would have adequate funds, the best option is to pay farmers when collecting the seed and if any profits are made the farmers can be paid rebates.

Other problems faced by ASSMAG include the following

- Research centers do not have enough foundation seed and planting materials for improved crop varieties for smallholder farmers to multiply due to inadequate financial resources.
- Seed Services Unit does not have enough resources to carry out its mandatory seed inspections as per their required frequency and schedules.
- Due to resource constraints small scale seed producers do not receive much needed annual training sessions vis-à-vis seed production to maximise required seed quantity and quality.
- Until now, the national policy is not very clear on plant breeders rights (PBR) to the extent that a particular variety is used free for all without control as opposed to other privately owned brands.
- ASSMAG suffers a huge transportation bill in a bid to centralise seed processing and taking it back to selected market outlets hence considerably reducing on the growers' profit margins.
- Seed Promotion costs are unattainable by small scale seed. This renders otherwise good seed produced by small scale farmers but remaining unknown and unsold due to lack of aggressive promotional campaigns.
- ASSMAG lacks centralised warehouse facility for seed stocks re-handling, fumigation and storage prior to distribution to ensure quality uniformity.

3.6 Opportunities for linking the ICRISAT supported seed groups with ASSMAG

The small scale seed groups supported by the project auger well with the ASSMAG model. There is need for incorporating the groups into ASSMAG structure as this will also take care of the sustainability of the group activities beyond the project life. The project supported farmers groups can get organized into Seed Multiplication Action Groups (SMAGS) in the districts or join the existing SMAGs and access marketing linkages that has already been developed.
ASSMAG works collectively through groups at different levels and ASSMAG coordinates production trainings, seed certification activities, seed processing and seed marketing-related issues of all the member groups. This would be of benefit to the farmer groups in the project area. ASSMAG has been buying seed from breeders (maize, groundnuts, and soya) and distribute to its farmers for multiplication (on loan). This would be of benefit to the famer

groups as a source of seed after the project life. ASSMAG bulks and processes seed for its members as such the ICRISAT groups would benefit from this value addition opportunity.

And also taking into account that ASSMAG is country wide as a seed distribution channel and its marketing outreach is wider reaching more areas, the small scale seed group supported by the project would benefit more by aligning to ASSMAG. Comparatively Funwe Farms a seed company located in Mangochi has the capacity to distribute seed almost national wide taking advantage of the agro-dealer network and hence there is a higher possibility of farmer groups if they get organized to through ASSMAG model to link up with agro-dealer network and sell their seed nationwide.

4 Conclusions

This short study has shown a number of lessons which needs to be considered when designing and implementing small scale seed multiplication programme. These are highlighted below:

- **Training of farmers on group dynamics, production technologies and practices**

The farmer groups require a systematic process of mobilization and continuous training on issues of group functioning and technical aspects of seed production and marketing. The groups need to understand the government standards and requirements for seed production and marketing. The groups need to be assisted to grow along their objectives and achievements through effective strengthening and coordination.

- **Include governance issues for sustainability**

The groups need to establish functional governance structure and communication systems to facilitate their work and common purpose. The groups may also need to be facilitated to establish some operational modalities and rules for their operations. They also need to establish functional linkages with support structures such as extension systems to ensure adequate support.

- **Sourcing of foundation seed and distribution to farmers**

The sources of basic good quality seed are limited and the seed may be in short supply. The farmers need to be supported to plan, secure financing and engage the sources in time to ensure they secure the needed start-up seed in a timely manner. There is also need to provide support for the production of basic seed by accredited institutions so that the seed can be available for multiplication.

- **Organizing inspections and seed testing**

The seed inspection and testing services are centralized and done by one government agency. This means that it may be difficult for many small scale farmers to access the services without facilitated and organized support. In addition, funding for such operations may not be available for the groups unless external support is provided or unless it is paid after sales. This might a major limitation to smallholder farmers engaging in sustainable and recognized seed production and marketing.

- **Coordinated effort on marketing**

To derive satisfactory benefits from small scale seed operations, there is need for a coordinated effort in marketing. This should start with training and empowering the producers to plan, explore and engage in marketing operations. Availability of rewarding markets can empower the farmers to realize benefits from their operations and be moved to grow more and into sustainable seed operations. The marketing support needs to look at the whole chain of activities required for the marketing process to succeed. Of particular importance is market information. The groups need to have access to available market opportunities, prices, costs and challenges. This also requires some facilitated support.

Appendixes

Appendix 1: Focus group discussions summaries - Chiradzulu district
Thumbwe EPA; TA Nkalo

Groups interviewed in Chiradzulu
Pigeon peas
1. Nkhuku group
2. Nankuyu group

Groundnuts
1. Perenje/Nkhuku group
2. Namonche group
3. Kholomana group
4. Mtambalika group

Objectives/Activities of the group

Group	Objectives/Activities of the group
Nkhuku	• Multiply pigeon pea seed and pass-on to other people • Sell excess produce –grain
Nankuyu	• Multiply seed and pass-on to others • Sell excess produce to raise income
Perenje/ Nkhuku	• Multiply groundnuts seed and pass-on to others, then grow independently • Sell excess produce – for group and individual benefits
Namoche	• Multiply seed and pass-on to others • Sell excess produce to raise income
Kholomana	• Multiply seed and pass-on to others • Use excess produce for food and for sale to raise income • To promote groundnut farming
Mtambalika	• Multiply seed and pass-on to others • Sell excess produce to raise income

Membership composition

Group	males	females	total	remarks
Nkhuku	**2**	**4**	**6**	Membership has decreased – the crop for the group was attacked by diseases and they did not harvest anything – group not functional
Nankuyu	**2**	**18**	**20**	Membership has increased
Perenje/Nkhuku	**0**	**12**	**12**	No change in group membership
Namoche	**6**	**17**	**23**	Membership has declined due to poor yields and no financial benefits realized
Kholomana	**3**	**12**	**15**	Membership has increased
Mtambalika	**4**	**12**	**16**	Membership has increased

Does the group keep accurate records?

Group	Year established	Crop	records of production	records of sales	records of prices	records of income
Nkhuku	2009	Pigeon peas	no	no	no	no
Nankuyu	2009	Pigeon peas	Yes	yes	yes	yes
Perenje/Nkhuku	2009	Groundnuts	Yes	yes	yes	yes
Namoche	2009	Groundnuts	Yes	yes	yes	yes
Kholomana	2009	Groundnuts	Yes	Yes	Yes	Yes
Mtambalika	2009	Groundnuts	Yes	Yes	Yes	Yes

Support group received and production performance

Group	Crop	Variety	Support received	training on production	Area planted (acres)	Production 2009/10 (kg)	Production 2010/11 (kg)	Sale	Members benefited from seed produced
Nkhuku	Pp	41	Seed (once in 2009)	yes		0	0	No	0 benefited crop attacked by diseases
Nankuyu	Pp	Kachangu	Seed	No	5	500 5 lost 50 shared 400 sold	1000 6 lost 40 shared 750 sold	yes	20 benefited
Perenje/ Nkhuku	Gn	Manipintar CG7	Seed	Yes	0.1	210 80 lost 30 shared 100 sold (K 15000)	250 50 lost 30 shared Not yet sold any	yes	19 benefited
Namoche	Gn	Nsinjilo	Seed (2009)	no	1	320 50 lost 220 shared	0	no	23 benefited
Kholomana	Gn	CG7	Seed (2009)	no	1.5	300 50 lost 200 shared	200 40 lost 200 shared	no	47 benefited
Mtambalika	Gn	Nsinjilo	Seed	no	1.4	800 150 loss 200 shared 450 sold (K150/kg)	550 100 loss 150 shared 300 sold (K140/kg)	yes	41 benefited

Most groups felt they would have benefited more if they operated as individuals and not as a group

Storage of seed/produce

Group	Type of storage	Mode of storing seed	Varieties stored separately	Chemicals used	Seed drying method	Storage challenges
Nkhuku	NA	NA	NA	NA	NA	NA
Nankuyu	Unconditioned	grain stored in sacks – easy to store and fumigate	Mixed	Yes	Sun drying – easy and efficient	weevils Rodents Poor storage facility
Perenje /Nkhuku	Unconditioned	Seed stored in the house unshelled – to control from theft, rodents and moisture	Mixed	No	Sun drying – cheap & convenient	Rodents
Namoche	Unconditioned	Stored unshelled to prevent rotting due to moisture and to save labour	Mixed	no	Sun drying	Poor storage facility Rodents theft
Kholomana	Unconditioned	Stored shelled in bags – easy to handle and treat	Not mixed	yes	Sun drying	rodents nuts rotting
Mtambalika	unconditioned	Stored unshelled to protect from weevils, rodents and moisture	Mixed with own local varieties – no grading	no	Sun drying	rodents theft poor storage facilities

Marketing

Group	Crop	Any sales of seed produced	Marketing costs	Any market linkages	Potential for seed/grain market	Marketing challenges
Nkhuku	pp	None	None	No	Yes - grain	no production due diseases no linkage with reliable markets – only vendors
Nankuyu	Pp	Yes (grain) 2010 – MK40/kg through vendors 2011 – MK54/kg	250 4km to local market	Yes (Export Trading ltd)	Yes grain Rab Processors,Trans Globe, Export Trading, Mulli Brothers	Lack of information on market opportunities Vendors/ middlemen distorting the market by offering low prices and influencing farmers to sell early
Perenje/ Nkhuku	Gn	Yes (grain) 2010 – MK 150/kg	None Sold at Namitambo market – 1.5km traveling on foot	No	None for seed but for grain	No linkage with markets – lack of coordination Transport costs to markets in the city ICRISAT should assist in finding markets
Namoche	Gn	no	NA	no	Yes – grain Vendors, ADMARC, Mulli Brothers	Low production No linkage with competitive markets
Kholomana	Gn	no	NA	No	Yes – Mulli Brothers & vendors	Low production No linkage to markets to offer good prices ICRISAT as a supplier of seed should buy the produce from the group

Mtambalika	Gn	yes	K200 produce sold as grain at Nkando market – 5km travel by foot or bicycle	No	Yes (grain)– Export Trading, Muli Brothers, Rab Processors, vendors	No linkage to good markets Low prices in local markets offered by vendors Low production ICRISAT as a supplier of seed should buy the produce from the group at high price

Likely potential buyers/markets for grain in the area include Rab Processors, TransGlobe, Export Trading, Mulli Brothers and vendors

Impacts and benefits of the models

Group	**Benefits from the model**	**Were your Expectations met through the model**	**Expectations from the model**
Nkhuku	Access to improved seed variety from the project	No	expected high yields No benefit – crop destroyed by diseases
Nankuyu	access to good seed selling excess produce and earn income improved access to food - nutritional benefits	No	Expected more good seed Expected timely support to link with reliable markets Expected higher prices Expected to receive training
Perenje/Nkhuku	Project has improved access to seed of improved varieties The group has realized some income from sales	partly	The group has enough production which they can use as seed The group has been able to relies some income from sales There has been no training for succeeding group members
Namoche	Access to free improved seed	No	Expected high yields and returns from sale of excess produce Expected to increase group membership
Kholomana	Access to improved seeds Access to nutritious food Potential to raise income from sales	Partly	Easy access to seed Access to nutritious food (nsinjilo) Expected more excess produce to raise incomes
Mtambalika	Access to improved seed	No	Expected higher yields but poor rainfall affected production Expected improved incomes and livelihoods Expected to keep more seeds in seed bank Expected to receive training

Main challenges faced

Group	Main challenges faced by group	General performance of the group
Nkhuku	Crop destroyed by diseases	-Poor • the variety given was not suited to the area
Nankuyu	Pests and diseases rratic rainfall No access to reliable markets	– fair – group making some progress • Group members show some commitment • Lack of training slowed progress • Little support from extension agents
Perenje/Nkhuku	Low yields Some farmers failing to pay back and pass-on seed	– fair • Group members are few and receive small quantities of seed. More farmers are willing to participate but constrained by seed available •
Namoche	Unfavorable weather resulting in low yields Some members failing to pass-on seed Late pass-on to some members Poor group coordination	-poor • Poor coordination leading to poor performance • Poor weather resulting in low production • Lack of training on production
Kholomana	Erratic rainfall Failure to pass on by some due to low production Lack of technical knowledge	-weak • Poor performance of seeds and low production • Lack of knowledge on gnut farming • Unfaithfulness of some members • Recycling of seed
Mtambalika	Poor rainfall Lack of technical knowledge Unwillingness of some members to pass on to others – lack of cooperation	-poor • Lack of training on gnut farming • Poor coordination amongst group members

Awareness of requirements for seed production by government and seed companies

Group	**Awareness of requirements for seed production**	**Preferences of the group**
Nkhuku	Not aware – not yet in seed production	Group would prefer to venture into seed business because seed would fetch higher process but the group has no linkage with markets for seed
Nankuyu	Not aware – not working as seed producers	Group would prefer to produce seed than grain to realize higher returns but they lack technical skills, market information and adequate land
Perenje/ Nkhuku	Aware – but not working as seed producers because they feel they cannot meet the requirements because they lack capital and technical knowledge	Group would prefer to produce seed than grain to realize higher prices and incomes but they lack technical skills, capital, appropriate seed varieties and where to find markets
Namoche	Not aware – not working as seed producers	Group would prefer to engage in seed if it can fetch higher prices on the market
Kholomana	Not aware – not operating as seed farmers	Group would prefer to engage in seed production to realize higher returns on the market
Mtambalika	Not aware – not working on seed business	Group would prefer to engage in seed production to realize higher prices/ returns

Sustainability mechanisms after the project and Assistance needed

Group	**Sustainability mechanisms after the project**	**Assistance needed**
Nkhuku	No plans – group collapsed	Good seed of varieties suitable to the area
Nankuyu	To promote pass-on scheme to ensure more members access seed The group to grow more pigeon peas and operate as a farming business Group to engage in value addition to get more returns	Training in seed production Support with financial capital/loan to produce pp as a business More supply of suitable and good seed The group needs assistance to source pesticides and herbicides
Perenje/Nkhuku	Need to store more for pass-on scheme Need for training on how to sustain the group operations The group to establish and enforce regulations on pass on scheme for all group members	More supply of suitable and good seed to avoid recycling of seed Training in seed production and group coordination The group needs assistance to establish linkages with coordinated markets
Namoche	To promote pass-on scheme To engage in value addition	More improved seeds Training in seed production and group coordination
Kholomana	To promote pass-on scheme Need for improved coordination of the group Need to promote faithfulness among members Need training for members Need to engage in value addition of produce	Need assistance to access/link to markets Need more seeds of improved varieties Need support to access pesticides Need support on training of group members
Mtambalika	To promote pass-on scheme Need to keep more grains for the group Need to expand production of members Need to engage in value addition of produce	Need training on production and marketing Need support with capital Need for regular technical advice Need for good linkage with markets

What improvements the group recommends

Group	what improvements the group recommends
Nkhuku	▪ supply of appropriate seed varieties of adequate quantity ▪ training for the group in crop management ▪ support with pesticides ▪ support the group to establish market linkages
Nankuyu	▪ the project should increase supply of seed varieties of high quality ▪ support the group to establish market linkages
Perenje/Nkhuku	▪ need for training to build capacity ▪ supply of improved suitable seed varieties ▪ support the group members with loans for small scale businesses ▪ support the group in linking up with markets
Namoche	▪ need more supply of good seed to avoid recycling ▪ need to train group members on management of new varieties ▪ need support to establish linkages with markets early when there are prospects of bumper yield
Kholomana	▪ provide more varieties and on time ▪ provide training to members on management of improved varieties ▪ support the group to access working capital e.g. seeds and other inputs ▪ support the group to link with good markets
Mtambalika	▪ need constant supply of good seed to avoid recycling of seed ▪ need training on how to handle new varieties

Appendix 2 Focus group discussions summaries - Thyolo district

Thekerani EPA

TA Nsabwe

Groups interviewed in Thyolo

1. Tiyese group – community seed bank model - groundnuts
2. Kozalendo group – community seed bank model - groundnuts
3. Mchenga group -community seed bank model – pigeon peas and groundnuts

Objectives/Activities of the group

Group	Objectives/Activities of the group
Tiyese	• Multiply groundnuts seed and pass-on to other people • Sell excess produce – groundnut grain
Kozalendo	• Multiply seed and pass-on to others • Variety testing to find suitable varieties for the area • To improve livelihoods through increased production and incomes
Mchenga	• Multiply groundnuts seed and pass-on to other people • Sell excess produce – for group and individual benefits

Membership composition

Group	males	females	total	remarks
Tiyese	**3**	**3**	**6**	Membership has not increased
Kozalendo	**15**	**15**	**30**	Membership has increased
Mchenga	**5**	**13**	**18**	No change in group membership

Does the group keep accurate records?

Group	Year established	Crop	records of production	records of sales	records of prices	records of income
Tiyese	2009	Groundnuts	Yes	NA	NA	NA
Kozalendo	2009	Groundnuts	Yes	NA	NA	NA
Mchenga	2009	Pigeon peas groundnuts	Yes	NA	NA	NA

Support group received and production performance

Group	Crop	Variety	Support received	Group received training	Area planted (acres)	Production 2009/10 (kg)	Production 2010/11 (kg)	Sale	Members of the group who have benefited from seed produced
Tiyese	Gn	Nsinjilo	seed	No	0.25	135 lost[2] 8 shared	155 lost 10 shared	No	5 benefited - low production crop not suitable
Kozalendo	Gn	Nsinjilo[3]	Seed (20kg)	Yes (09/10)	1.5	40 10 lost 30 shared	70 10 lost 60 shared	no	33 benefited- low production due to poor rains
Mchenga	Pp	40	Seed	No	1	90 50 lost 40 shared	100 40 lost 60 shared	No	18 benefited- low production
	Gn	Nsinjilo	Seed	no	1	150 50 lost 100 shared	200 60 lost 140 shared	No	18 benefited- low production

Members of the group who have benefited from the seed produced:

[2] lost 10kg due to poor storage, theft or pests; shared the remaining 30kg
[3] Some farmers also grow a bit of chalimbana and CG7

Marketing

Group	Crop	Any sales of seed produced	Marketing costs	Any market linkages	Potential for seed/grain market	Marketing challenges
Tiyese	Gn	None	None	No	none	Low production Poor access to the area – area very remote Lack of knowledge and skills on marketing
Kozalendo	Gn	None	None	No	none	Lack of information on market opportunities Poor transport network limiting access to the area The project should buy produce from the group or secure markets
Mchenga	Pp gn	none	none	No	none	Lack of knowledge and information on market opportunities Low quantity and quality of produce No linkage with markets Poor coordination The project should buy produce from the group as owners of the seed

No information on likely potential buyers/markets for both seed and grain the area

Storage of seed/produce

Group	Type of storage	Mode of storing seed	Varieties stored separately	Chemicals used	Seed drying method	Storage challenges
Tiyese	Unconditioned in a sack in a house – this is what the group can afford	Seed stored unshelled – to prevent pest damage and moisture	Yes	No	Sun drying – easy and cheap	Poor storage facilities – leading to rotting of some nuts due to moisture Damage by rats theft by children
Kozalendo	Unconditioned	Seed stored shelled – to ensure only good grain is stored for seed	Yes	no	Sun drying – easy and efficient	Poor storage facilities Rodents Lack of chemicals for treatment
Mchenga	Unconditioned	Seed stored shelled – easy to treat and store	Yes	yes	Sun drying – not too involving	Poor storage facilities Rodents Pests Lack of chemicals for treatment

Impacts and benefits of the models

Group	Benefits from the model	Were your Expectations met through the model	Expectations from the model
Tiyese	Access to seed from the project Increased availability of groundnuts for food at home	no	Expected training from the project expected high yields Expected more seed types and other farm input support from project No improvement in livelihoods due to the model
Kozalendo	Increased access to good seed Able to sell fresh groundnuts and earn income Nutritional benefits through eating groundnuts (nsinjilo)	Partly	Expected improved access to good seed Expected to improve livelihoods Expectations partly met due to: Limited trainings Limited seed to meet increased beneficiaries
Mchenga	Not much benefits due to low production caused by poor rainfall	No	Expected to get benefits from sale of excess production Expected training from the project Expected high yields Expected more seed types and other farm input support Outcome: No growth for the group No linkage to the markets No improvement in livelihoods due to the model

Main challenges faced

Group	**Main challenges faced by group**	**General performance of the group**
Tiyese	Low knowledge on groundnut production due to lack of training Late supply of seed by the project Small quantity of seed Unfavourable weather	-Poor • the variety given was not suited to the area • poor weather pattern – erratic rains • lack of knowledge/training
Kozalendo	Erratic rainfall resulting in low production Pests and diseases Late supply of seed by the project Lack of technical advice on seed production Limited production to pass-on to more beneficiaries who need the seed	– poor • unfavorable weather affected production • lack of knowledge to deal with new varieties • poor coordination between group members and with extension agents
Mchenga	Lack of coordination Lack of knowledge Lack of capital Late delivery of seed by the project Some members not willing to pass-on seed to others	– poor • lack of technical guidance • unsuitable varieties supplied • poor coordination between group members and with extension agents • lack of knowledge and skills to deal with new varieties • unfavorable weather affected production

Awareness of requirements for seed production by government and seed companies

Group	Awareness of requirements for seed production	Preferences of the group
Tiyese	Not aware – not yet in seed production	Group would prefer to venture into seed business because seed would fetch higher process but the group lacks knowledge and skills in seed business
Kozalendo	Not aware – not working as seed producers	Group would prefer to produce seed than grain to realize more yields and incomes but they lack technical skills, market information and coordination
Mchenga	Not aware – not working as seed producers	Group would prefer to produce seed than grain to realize higher prices and incomes but they lack technical skills, capital and appropriate seed varieties

Sustainability mechanisms after the project and Assistance needed

Group	Sustainability mechanisms after the project	Assistance needed
Tiyese	• Need to get trained • Need to continue the seed pass-on scheme • Need proper coordination • Need commitment from group members • The group needs to engage in value addition for the grain to raise more income • Need for financial contributions from group members	• Training in production and coordination • Good seed of varieties suitable to the area
Kozalendo	• To promote pass-on scheme to ensure more members access seed • The group to sell excess produce and keep the funds for furthering group operations • Group members to contribute MK100 per person per month for group sustainability • Establish linkages with coordinated markets	• Training in seed production and group coordination • More supply of good seed • Support with Farm inputs and financial capital • The group needs assistance to establish linkages with coordinated markets
Mchenga	• Increase technical skills • Need to continue the seed pass-on scheme • Financial contributions from group members	• Training in seed production and group coordination • More supply of suitable and good seed • Support with farm inputs and financial capital • The group needs assistance to establish linkages with coordinated markets

What improvements the group recommends

Group	what improvements the group recommends
Tiyese	• supply of appropriate seed varieties • supply of adequate quantity of seed • training for the group • support with pesticides and herbicides • support the group members with loans for small scale businesses
Kozalendo	• the project should supply more new seed varieties of high quality • there should be good coordination between group members and extension staff • the project should build capacity of groups through training • the project should assist in supplying pesticides for the group
Mchenga	• need for training to build capacity • supply of improved suitable seed varieties • support the group members with loans for small scale businesses • support the group in linking up with markets

Appendix 3 Profiles of agro-dealers in the ICRISAT project areas

Profile of the agro-dealers

District	Chiradzulu	Chiradzulu	Chiradzulu	Thyolo
T/A	Nkalo	Nkalo (STA Mpunga)	Nkalo	Nanseta
EPA	Thumbwe	Thumbwe	Thumbwe	
Place (Market/Town)	Rosa	Maele	Namitambo	Luchenza
Agro-dealer	Maxwell Kambele	Kapito Saini	Mrs. Misenje	Rex Chaduka
Level of understanding of the respondent (High=3, Medium=2, Low=1)	2	3	3	3
Education	Std 8	JCE	MSCE	MSCE
Sex: 1=male; 2=female	1	1	2	1
Type of trader :	Rural shopkeeper	Rural assembler	Rural shopkeeper	Rural shopkeeper
Ownership of business	Sole proprietor	Sole proprietor	Sole proprietor	Sole proprietor
Role in enterprise:	Owner manager	Owner manager	Owner manager	Owner manager
Year when business started	2007	2000	2009	2007
Year when started selling agricultural inputs (seed, grain etc)	2007	2009	2009	2008
Years of experience in business	4	3	3	4
Number of permanent employees	0	1	1	1

Status of agro-dealer business

District	Chiradzulu	Chiradzulu	Chiradzulu	Thyolo
Agro-dealer	Maxwell Kambele	Kapito Saini	Mrs. Misenje	Rex Chaduka
Share of agric. commodities in business	>50%	100%	100%	95%
Received training in agro-dealership	Yes	Yes	Yes	Yes
Type of training received	Pesticides and herbicides handling Seed handling, marketing, business management	Pesticides management and marketing Agro-input marketing	Agro-chemicals handling Agricultural production	Respondent not sure
Level of satisfaction (a. satisfied b. Not satisfied c. don't know	B not supplied with startup equipment	b needed training on breakeven analysi	a	?
Certified agro-dealer (1=yes; 2=no)	1	1	1	1
Benefits from certification	Farmers having easy access to seed Income from sales	Not much	Recognition by seed suppliers Networking with other agro-dealers Increased knowledge	Freedom to buy and sell agro-inputs and commodities Supporting development of the country through taxes
Major source of start-up capital	Loan from MRFC (MK150,000)	ASMAG – startup seed	Cash loan from SACCO	Own cash from farming
Savings account with a bank	Yes	no	Yes	Yes
Received a formal business loan	Yes (MRFC & OIBM)	No	Yes	Yes
Source of operating capital	Own funds	Own funds	Own funds	Own funds
Licensed business enterprise	Yes	No	No	Yes
Number of established buying points in district	1	0	0	1
Number of buying points outside district	0	0	0	1
Number of established selling points in district	1	1	2	2
Number of selling points outside district	0	0	0	0
Approx number of customers serving	Many villages around the area	15 small seed multipliers under ASMAG	>500 farmers	Many – situated at Luchenza town

Amount of inputs traded

District	Chiradzulu	Chiradzulu	Chiradzulu	Thyolo
Agro-dealer	Maxwell Kambele	Kapito Saini*	Mrs. Misenje+	Rex Chaduka**
Maize seed 2008/09	500		5000	30000
Maize seed 2009/10	1000		9000	5000
Maize seed 2010/11	2000		9000	2500
Gnut seed 2008/09				2000
Gnut seed 2009/10	150	774 (K65/kg)	1000	
Gnut seed 2010/11	50	360 (K75/kg)	1000	
Ppea seed 2008/09	150			20000
Ppea seed 2009/10	250			30000
Ppea seed 2010/11	100			
bean seed 2008/09				
bean seed 2009/10				
bean seed 2010/11	250			
Soya seed 2008/09				
Soya seed 2009/10			1000	
Soya seed 2010/11			1000	
Other seed – rice-2009				5000
Pesticides – 2008/09				10000
Pesticides – 2009/10				15000
Pesticides – 2010/11				11000
Fertilizer – 2008/09				30000
Fertilizer – 2009/10				5000
Fertilizer – 2010/11				0
Farm machinery				
-treadle pumps 2009				10
– treadle pumps 2010				5
– treadle pumps 2011				5
Farm outputs				
Maize – 2009				20
Maize – 2010				10
Maize -2011				0
Pp – 2009				30
Pp – 2010				7
Pp -2011				0

*Produces own seed as ASMAG farmer and sells through ASMAG and to other farmers (price in 2009/10 = MK65/kg and in2010/11 = MK75/kg)

+ obtains seed from seed companies such as SeedCo, Seedtech, Pannar – sells and gets dealer commission – seed is delivered at her shop by seed companies

**agro-dealer at Luchenza town servicing a large market. Also obtains supplies from seed companies in addition to buying from farmers

Seed buying activities for the 2010/11 agricultural year

District	Chiradzulu	Chiradzulu	Chiradzulu	Thyolo
Agro-dealer	Maxwell Kambele	Kapito Saini	Mrs. Misenje	Rex Chaduka*
Maize seed Amount	2000kg		9000kg	2500kg
Month bought	Sept 2010		October	
Variety bought	MH17&18, opv		?	
Variety new	New		New	
Source of seed	Seedtech		Pannar Seed	
Quality of seed	Above average		Above average	
Price paid/kg	MK300		-	
Handling costs	Supplier delivers by truck		Supplier delivers by truck	
Transport costs	MK400 to place order			
Other costs	-			
Selling price	Subsidy price		MK5m total value	
Gnut seed amount	50kg	60kg unshelled Seed to grow	1000kg	0
Month bought	July 2010	Oct 2010	Oct 2010	
Variety bought	Chalimabana	CG7	CG7	
Variety new	old	New	New	
Source of seed	Nkando market	ASMAG	SeedCo	
Quality of seed	Medium	Above average	Above average	
Price paid/kg	150	MK80/kg unshelled	-	
Handling costs	-	K1000	5000 registration fees	
Transport costs	Own bicycle	K4000	1600	
Other costs	-	2000	1000/month rent	
Selling price/kg	200 Sold in own shop	MK70 unshelled 300kg to World Vision	-subsidy	
Ppea seed Amount	100kg			0
Month bought	Sept 2010			
Variety bought	Red			
Variety new	Not sure			
Source of seed	Local farmers			
Quality of seed	Medium			
Price paid/kg	50			
Handling costs	-			
Transport costs	Farmers bring to the shop			
Other costs	-			
Selling price/kg	100			
bean seed 2010/11				
Amount bought	250			
Month bought	Aug 2010			
Variety bought	?			
Variety new	Old			
Source of seed	Farmers from chikwawa			
Quality of seed	Medium			
Price paid/kg	150			
Handling costs	-			
Transport costs	K10/kg includes handling			
Selling price/kg	200			

*Proprietor of shop out of the country during interviews – interviewed brother who was running the shop at the time but he had less detailed information on costs

Agro-dealers knowledge and interaction of seed groups in their area

Agro-dealer	Awareness of improved ppea varieties	Awareness of improved gnut varieties	Interaction with community seed groups	experiences
Maxwell Kambele	No – only knows local and red early maturing variety	No – only knows chalimbana variety	no	NA
Kapito Saini	Yes – do not know varieties	Yes – CG7	No – except for fellow ASMAG seed farmers. He is ready to link up and sell or find market for seed from smallholder group in the area	NA
Misenje	Yes – do not know varieties	Yes – do not know varieties	No – planning to start next season by buying their produce	NA
R. Chaduka	No	Yes – CG7, Nsinjilo, Manipintar, Chalimbana	yes	Seed quality is poor Low education limiting communication Farmers expected prices are too high

Constraints and recommendations by agro-dealers

Agro-dealer	Major constraints in pp seed trade	Major constraints in gn seed trade	Suggestions to address constraints
Maxwell Kambele	Lack of adequate capital to buy seed stock	Lack of adequate capital to buy seed stock	Support to get more access to credit
Kapito Saini ASMAG member	NA	Lack of basic seed to multiply – only sourced from Lilongwe Lack of market for seed Seed inspectors not regular in assessing fields of seed multipliers	Need for government to train more people to multiply breeder seed Government should regulate competition from large seed companies competing with small scale seed farmers Government should train para seed inspectors
Misenje	NA	Not able to meet choices/ expectations of farmers	Need for thorough knowledge on varieties and agro-chemicals to support farmers Need good communication skills to pass on information to farmers
Rex Chaduka	Limited capital Competition High transport cost	same	Improve access to loans