

# Scaling out Improved Sesame Production Technologies Field Visits (October 7-9, 2014) Report



**Written by: Anteneh Mekuria**

Sesame  
Business  
Network  
Ethiopia

# Table of contents

1. Introduction.....	1
2. Day one: visited visits at Sanja, Ahere, Seroka, Dansha Aurora, Rawyan clusters.....	2
2.1. Tach Armachiho woreda: Sanja and Ashere Clusters.....	2
2.2. Seroka woreda.....	5
2.3. West Tigray zone/ Tsegede Woreda: Dansha Auraro.....	6
3. Day Two: Abrehajira and Abderafi Clusters.....	7
3.1. Abderafi discussion in hall.....	9
4. Day Three: Kafta Humera Cluster.....	10
5. Closing Remark.....	11

Appendix 1: List of participants

## 1. Introduction

SBN Support Programme, together with North Gondar and West Tigray zone and woreda offices of Agriculture and Humera and Gondar Agricultural Research Centres, has been doing a roll out of evidence-based best sesame production practice from June-November 2014 in the eight SBN woredas. For this endeavour, 100,000 copies of sesame production guide entitled “20 important steps to improve sesame yield and increase the quality of sesame” were produced and distributed to farmers and professionals. 1084 farmers and development agent were trained as trainers. These trainees further generate awareness of many other farmers by sharing their new knowledge and skills using the formal and informal communication channels. Afterwards, demonstrations of improved sesame production technologies have been run in 916 model farmers’ plots and Farmer Training Centres (FTCs). Apart from this, crop rotation experimental trial has been made in 18 FTCs. More than 90 percent of the demonstration plots have been successful. Almost each demonstration plot has been visited by the surrounding farmers and professionals at least twice. Through repeated field days, more than 75,000 farmers were able to see the improved sesame technologies in different maturity stages of the sesame.

From October 7-9, 2014, sesame field visits were organized with the objective of showing the results of the scaling out activities of improved sesame production technologies to the concerned officials at different levels: federal, regional, zonal and woreda level. It was also aimed at showing the crop rotation trial in FTCs in this production season. Higher officials including Mr Martin Koper and Dr. Worku Tesema from the Netherlands Embassy at Addis Ababa, Dr. Adugna Wakjira, deputy director of Ethiopian Institute of Agricultural Research (EIAR) and Ted Schrader, coordinator of the Sesame Business Network (SBN) Support Programme from CDI, Wageningen University, the Netherlands attended the three day field visits. Other attendees were drawn from the EIAR, Amhara and Tigray regional Agricultural Research Institutes, zone and woreda Offices of Agriculture, 2SCALE project, EXC, AGP, ISSD project and other government and private organisations. Selected sesame farmers joined the field visits organized in their woredas.

Attendees visited demonstration plots of improved sesame production technologies in five model farmers’ fields; and crop rotation trials in five FTCs. More than 700 people attended the field days held in three consecutive days at Tach Armachiho, West Armachiho, Tegedie, Tsegedie and Kafta Humera woredas.

The field days served as platforms for farmers and professionals at different levels for sharing and learning from field results on their application of the 20 step sesame production technology package. The feedbacks from attendees were significantly positive. Most farmers appreciated the sesame planted using the improved production technologies such as row planting, fertiliser application, three times weeding etc. Farmers also raised challenges such as pest and disease problem, lack of quality seed varieties which could resist pest and disease, lack of farm machineries, problems in relation to blanket recommendation of fertilisers, lack of market for relatively new rotational crops. Professionals from the two regions and the federal Agriculture Research Institutes promised farmers that they will do all their best to search for solutions for these and other challenges raised.

The field days were mainly facilitated by Dr. Geremew Terefe, national coordinator of the SBN Support Programme and all other SBN Support Programme staff members.

## 2. Day 1: Sanja, Ahere, Seroka, Dansha Aurora, Rawyan

### 2.1. Tach Armachiho woreda: Sanja and Ashere Clusters

The field day began at Tach Armachiho woreda, Fielwuha FTC. Dr. Geremew Terefe, gave a brief explanation about what has been done in the FTC this production season. He said in Fiewuha FTC the Tach Armachiho Woreda Office of Agriculture and Gondar Agricultural Research Center (GARC) together with the SBN Support Programme run improved sesame production demonstration plots, crop rotation trial which includes test of PAC-537 sorghum variety from Advanta Company, USA.

In the FTC, there are four kinds of sesame technology treatment; full package of improved sesame production technology, full package without fertilizer, full package with broadcasting, and the local practice. In addition to this, crop rotation trial has been run in five rotational crops, namely sesame, sorghum, green gram or mung bean, soya bean and cotton are planted with the objective of showing farmers' alternative crops that can be marketed as well as serve for food security. These crops have been planted in three replications. After harvesting the area will be marked and next year sesame will be planted to determine which crop is the best precursor for sesame. The trial will show farmers the fact that there are also other crops besides sesame; sesame after sesame will lead for soil fertility degradation, pest infestation, disease occurrence and affects the biodiversity of the area.

After Dr. Geremew's brief explanation questions were asked by participants. The following are some of the main questions raised and answers given by professionals and farmers.

#### Questions:

- What is the reaction of farmers concerning the performance of these varieties?
- How was the management in the trial? There is some disease in the green gram?
- What is the farmers' opinion about PAC-537 sorghum variety?

#### Answers:

- Mr. Hagos Woldegebriel from SBN Support Programme pointed out that he had been there for three successive demonstration days and farmers are really happy; they are in need of these quality seed varieties. For the second question he said the green gram was harvested. It is the remaining which is waiting for the second harvest. It was raining till recently and that is way we see some pests or disease in the green gram
- Reaction of a farmer: A farmer said, when he compare the current practice with what he used to do, it is quite different. He said, "Previously we harvest more from a small plot; but now the soil has lost its fertility; it is degraded. We have learnt that we can harvest more in a small field by using fertilizer and row planting, we have become well aware of the importance of crop rotation, repeated ploughing, fertilizer application..."
- With regard to the PAC-537 sorghum variety, the farmer said he liked the new sorghum variety. He said he is impressed by the performance of the new sorghum variety. He mentioned the fact that the soil is a degraded and the local varieties do not give more yields/do not have bigger heads as the PAC-537 variety does.

## Other suggestions

- Dr. Adugna Wakjira, deputy director of the Ethiopian Agricultural Research Institute(EARI) remind farmers that PAC-537 sorghum variety is a highbred one, which gives yield for one time and will not produce for the second time. If one wants to plant it next year, he/she should buy the seed again.
- Fisha Abreha, head of Tach Armachiho Woreda Office of Agriculture, pointed out that there are 24 kebeles in the woreda. The roll out of the improved sesame production technologies has been implemented in 11 kebeles. Farmers were made to visit the demonstration plots at model farmers' fields and FTCs four or five times in the different stages of the maturity of the plant. He added, previously there was no tradition of using improved technologies but now these activities are changing farmers. He said that farmers' reaction in different field days indicate that they have learnt a lot from the demonstrations.



Dr. Geremew, giving explanation about the work at Fielwuha FTC      Farmers showing PAC 537 Sorghum variety

After visiting the FTC in Fielwuha, participants headed to Ashere and visited Ashenafi Gebrselasse's demonstration field. Ashenafi is a model farmer in Ashere who planted sesame in 1 and 1/4 plot using all the recommended production techniques. Apart from officials from the woreda, zone, region and federal, several farmers drawn from the different kebeles of Tach Armachiho woreda attended the field visit. The field visit was facilitated by Mekonnen Asrade a development agent from the woreda Office of Agriculture. Ashenafi's field specially gave visitors the chance to compare the sesame fields which have been planted with and without the application of improved sesame production technologies.

Dr. Geremew mentioned that several field days have been arranged here. He remained farmers to take lessons from the field days arranged so far and today. He said "we want to see such practices in all the sesame farmers' fields next year, not in 50 farmers alone but in many farmers' fields in all the kebeles".

Ashenafi briefly mentioned what he has been doing in his field. He said he applied the improved production technology in his quarter 50x50 land. He ploughed the land three times, used 25 kg DAP and 12.5 Urea, weed three times.... He said he followed all the steps mentioned in the production guide except thinning. Although he is well informed about spacing between lines and plants, he did not do the thinning in line with the recommendation because he felt pity for the sesame. Despite this, he said, one can see the difference of this plot and the one in which he applied the input but did not use row planting.





Ashenafi, model farmer, explain what he has been doing to the attendees

Ashenafi's field was visited during harvesting time. He said he will use a canvas for thrashing. He has already bought 300 meter plastic sheet with 1500 ETB for placing hillas and thrashing. Ashenafi expects to harvest 8-10 quintal from the plot that he applied improved production technology. He said he will inform what he will get as soon as he is done with harvesting and thrashing.

Afterwards, farmers and officials come together in a school yard at Ashere and discussed about what they have seen. Mekonnen, who facilitates the field visit in Tach Armachiho, described that in Tach Armachiho woreda 84 farmers drawn from 11 kebeles were trained on the sesame production package. Demonstrations of improved sesame production technologies have been run in these farmers' fields and 11 FTCs with the support of SBN support programme. In all the FTCs, the crop rotation trials and PAC-537 sorghum pack 537 were planted. Out of the total demonstration plots, six demo plots failed because of hail.



Partial view of the discussion at Ashere

#### Questions and concerns raised by farmers

- A farmer said, the support provided so far is very good but from experience we have seen that projects come here and do not stay for long. The support should at least stay for longer periods.
- The seeds are very good, but there is a disease which affects both Humera 1 (the improved variety) and Kechin Gojjam (the local variety). Because of the disease the sesame plant will not give seed after flowering. The disease affects the plant even after having seeds/capsules.
- The sesame is very nice but it has been affected by a disease. A farmer said he informed professionals about the disease and he was told to uproot the affected sesame but this could not help him more.

## Answers

- The comment about the short duration of researches and projects is acknowledged. Farmers were told that the programme will stay for some time but they should not expect that the support is always there.
- Bacterial blight is a disease for which there is no pesticide. That is why it is recommended to uproot/avoid the sesame which is affected by it.
- Comments were also made that researchers should work together with farmers; researchers should learn from farmers.
- Mr. Tewodros Tesfaye, from GARC, briefed the major activities that GARC has been doing in relation to sesame. He said, with the support of SBN Support Programme GARC has been doing sesame variety selection, seed adaptation trial and fertilizer rate trial activities. Through research they have come to learn that Abasina seed variety is suitable for the water logging areas. It is also blight resistant. For medium level rain fall Humera 1 performs better; and Setit 1 performs well in the places where there is shortage of rain. He added, bacterial blight has no medicine. In order to prevent this blight, seed variety selection and land clearing are important. Farmers need to know that all fields may not be suitable for sesame. For example, sesame should not be planted in water logging areas but if we have to, we should give attention to seed selection. We should also drain the water using BBM and or other technologies. GARC is also doing a chemical trial for bacterial blight.

## 2.2. Seroka Woreda

Visitors went to Seroka and visited one of the best demonstration plots in the farmers' field. Farmer Tekeba Takele, who is the owner of the farm and Yirga Ayelegne, a development agent representing Seroka woreda office of agriculture, gave brief explanation about the demonstration plot.

Tekeba said he used the field for sorghum before because it was not good for sesame as it holds water/is a water logging area. With the support of Office of Agriculture and SBN support programme, Tekeba planted improved variety seed called Abasina this year. He said, "I ploughed three times; used the recommended fertilizer; and weed it four times. As you can see everything is perfect. The sesame has a good stand, with many capsules. I am sure I will have a very good harvest."

After visiting Mr. Tekeba's farm, attendees went to the nearby FTC which has been run by the woreda Office of Agriculture. Like that of the FTC at Fielwuha, there is a rotational crop experiment for sesame. 2.5 hectare is covered in five crops: sesame, cotton, sorghum, green gram and soya bean. Yirga explained that all the recommended technologies such as quality seed, row planting, three times weeding and all the inputs have been used in the field. There are also different trials: Some part of the plot is planted using quality sesame seed, inputs and without the application of row planting; another part local variety with row planting, utilization of all the inputs etc.

Suggestions were given for the representative of the woreda agriculture office to show farmers how to use soya bean for their own consumption as food as it is a very nutritious crop. It was also mentioned that it is thoughtful to make other crops available for farmers so that they can have alternative crops to choose.



Field visit attendees discussing in Seroka in a model farmers field: Tekeba Takele

### 2.3. West Tigray zone/ Tsegede: Dansha Auraro

Hagos Tadesse, Agricultural Production Coach in Humera, explained that SBN Support Programme together with Woreda Offices of Agriculture and Humera Agricultural Research Centre have been doing scaling out activities in three woredas: Kafta Humera, Tsegede and Wolkayet. In particular, in Tsegede demonstration activities have been made in 160 model farmers and 12 FTCs. In two FTCs, apart from the demonstration of improved sesame production technologies, there is crop rotation experiment trial and test of PAC-537 sorghum variety. Hagos added that there has also been a mechanization row planting trial in Kafta Humera, in two large scale farmers (eight hectare), three small scale farmers (three hectare) around May-Kadra and under research center (12 hectare) fields. In Western Tigray, 70 % of the farmers demonstration plots are more than one hectare while the remainder 30 % of the farmers land size of the demonstration plots are from 0.5-0.75 hectare and all FTCs do have more than 1.5 hectare.

He said in this FTC Setit 1 is used, row planting using camel and oxen; ploughed three times, and applied all recommended practices. SBN-Support Programme staff members have been monitoring. Farmers have learnt from this. Model farmers are happy by what they have right now. They said row planting was costly initially but they have seen when it ease the tasks in the later stages such as at weeding time, application of fertilizer, and in pest and disease scouting. Even though there is high rain fall in the area, more than 800 (the recommended for sesame is 450-550) these crops were planted early and they resist the water logging.



Visiting FTC near Dansha



A farmer reaction: “We have learnt from what we have seen. We were not using the technology before but now we are trying to apply it. We have learnt that it needs more labour. Some of us were complaining, asking for how long have we been breaking our backs? However, later on we found out that it was easy for us to do the weeding and for application of fertilizer.”

Asked about the advantages and disadvantages of putting small/large hillas together, the farmer said, putting more hillas together will help have some of the losses; he said they put relatively small hillas there because of their laziness.

Late in the day, attendees visited Melkamu Muluakal’s farm in Rawyan cluster. Melkam planted five hectare of his land using the improved production technology.

### 3. Second day: Abrhajira and Abderafi

The field day at West Armachiho woreda was started by the official welcoming speech of the acting Woreda Administrator Sinedu Tegegne. Filed visit attendees gathered in a small hall at Abrhajira. She welcomed field day participants on behalf of the woreda administration. She appreciated the support that has been provided by the SBN Support Programme. She said in particular, the programme has been contributing a lot in increasing the productivity and quality of sesame. Many farmers have started to use row planting and they are also applying fertilizer.

Dr. Abreham Abyue, director of GARC, briefly mentioned what GARC, together with SBN Support Programme, has been doing in West Armachiho woreda. He said, “a couple of years ago some people in the woreda were boldly arguing as fertilizer is not good for sesame, but this is changed now. Many farmers started to apply fertilizer. GARC has been doing 9 researches on quality seed improvement, pest and disease protection, and fertilizer trial...”



Mr. Addisalem Bitew, explaining the scling out activities done in West Armachiho for visitors

Mr. Addisalem Bitew, representing West Armachiho Woreda Office of Agriculture was facilitating the visit in the woreda. Addisalem took attendees to Mr. Sisay Takele’s farm, which is a water logging fields. He said they choose this plot deliberately because they wanted to check how the sesame survives in such water logging areas. He said they found that applying the recommended technology will help to have a very good result despite the water problem.

Next, participants visited the FTC at Abrehajira. After having a look at the sesame, crop rotation which includes PAC-537 sorghum, participants had some discussion in the FTC. Among the main points raised were:

- It is sorghum that is largely produced in the area. However, because of the high price of sesame last year, many farmers planted sesame this production season. Out of the total land 127,300 hectare in the woreda, 91, 827 hectare was covered by sesame. This shows that people are largely inclined to sesame.
- Striga was mentioned repeatedly as a main problem in the area.
- Participants especially appreciated the crop rotation trial. Introducing competent crops for the area is very important. It was mentioned that it will help farmers gain better price.
  - The price of green gram is greater than sesame. It reaches within 45 days.
  - Soya bean is important both in terms of price and soil fertility. It has nitrogen that the soil gets from urea. It adds this to the soil by nature. Using soya bean as a rotation crop will help reduce the cost that farmers spend for fertilizer as it helps the soil by nature
  - Haricot bean should also be tried in the area
  - Green gram will help farmers fertile their soil; decrease disease; it will also help them feed their kids properly.
- Since sesame has been planted for long it affects the soil fertility. There is pest and disease infestation. The productivity is not as such good.
- Productivity and quality of sesame has not yet been improved. Wide field smaller product; not smaller field and large product. In other words, it is through extensive approach that we get the result so far; a lot has not been done in intensification; however the starting of the cop rotation trial may lead us towards that direction, it should be appreciated.
- There need to be competent enterprise; the private sectors need to check the market in the sesame corridor. It seems that sorghum is the only crop which has been largely used in the area so the introduction of soya bean and other crops can help address issues in relation to nutrition or food security. Soya bean can be used as a milk; healthy productivity for the family. It will contribute in food security....
- Professionals from the agriculture sector should lead farmers to use rotational crops
- Investor farmers should see the crop rotation trial so that they can take lesson and take the practice to their fields
- About half a million people come to the sesame producing areas in search of work; these laborers only eat sorghum; introducing these crops will help to have alternative food for labourers; they can work well if they are feed well



Participants discussing at Abderafi FTC

### 3.1. Abderafi discussion in hall

After the visit, farmers from the woreda and officials who participated in the visit come together in an open hall at Abderafi. The discussion was facilitated by Addisalem and Dr. Tilaye Teklewulde, deputy director of Amhara Region Agricultural Research Institute (ARARI). The following are the concerns farmers raised and answers given by professionals:

- There is a blanket recommendation for the application of fertilizer. This has a negative impact on our work. Rate and type of fertilizer application should be studied. A farmer mentioned they lost all their sesames planted with and without the application of fertilizer. They requested if there are ways in which the soil for each specific area can be studied?
- Since there are many large scale farmers in the woreda, the use of mechanization in the area is very important. They hardly use drainage/camber bed, row planter and other machineries as these things are not available in the area.
- Farmers spend too much money for labour. Investor farmers need to have harvesting machine; chemical spray, row planter etc.
- Pest controlling system is a problem. The available chemicals are not killing the pests and disease. It seems that the pests adapt Endo Salfan and Malathine. They request if research centres could avail other chemicals.
- Farmers said they are trying to protect strigas using crop rotation, but striga is still a prevailing problem in the area. Farmers stop planting some crops because of striga. It is affecting not only sorghum but also maize and other crops. It will be nice if research can release good crops which resist striga.
- A women farmer expressed her concern about market problems. She said they have been planting soya bean since 2009 in her kebele but they did not find buyers. She said they gave their product to their goats because of market problem. She added, if they have market just like sesame and sorghum they will produce soya bean and other crops.
- There are weeds; wuha ankur (literally means weed which holds water). In Abotire, a large area of sesame field is affected by wuha ankur. We have tried all our best; we use anti-weed and other chemicals but in vain. This weed takes all the water. We have forwarded our chemical need but we got no answers from the woreda.

## Answers from research

- There should be specific recommendations which go in line with the different soil type. However, our observation so far shows that most farmers have not used fertilizers. This should be improved. In the future we will consider the soil type into consideration and come up with specific recommendations.
- GARC is doing research on the application of fertilizers for Amhara region; we studied the Metema and Tach Armachiho woredas, we will disclose the finding as soon as we are done with other sesame producing woredas
- In relation to machinery, together with some companies we have been trying to demonstrate some machinery such as row planting and cutting/harvesting machines. SBN Support programme together with Research Centres will check the performance of the machineries. Camber bed and BBM are available in woreda offices of Agriculture. BBM is improved these days. (A cutting matching was demonstrated in the third field day but it did not work well because of some mechanical problems)
- There are striga resistant sorghum varieties released from Sirinka and Melkasa research centres but TARI and ARARI will take the assignment of working with variety selection and adoption of striga resistance crops. Efforts which have been made to release striga and other pest and disease resistant varieties should include this area.
- Research Institutions and Centres should also take assignments in dealing with the new weed called wuha akure and pest and diseases.



Discussion at Abderafi; Dr Tilaye T/wold, deputy director, ARARI giving answer for the question and facilitating discussions

## 4. Third day: Kafta Humera Cluster

The first visit was on Mr. Tewolde Hailu, an investor farmer in Bereket, not far from Humera town. Attendees visited Mr. Tewolde's farm, the camp and the water harvesting place and discussed about his work. Mr. Tewolde, explained the overall activity that he is doing in his farm. He said, apart from his sesame plantation, he planted over 30,000 trees and mangos. He said he used Setit 1 and he has also used his own quality seed that he chooses among the local varieties. He also mentioned that he planted sesame using irrigation and harvested 7- 8 quintal per hectare.

- One of the participants asked Mr. Tewolde on why his harvest is limited to 7 or 8 while over 12 quintals can be harvested using irrigation. It is half of what can be harvested using irrigation.



- Mr. Tewolde said that the way he provides the necessary input depends on the availability of money. He said he utilizes the necessary input when he gets money; and does not provide when he has no money. He said “there is a problem of credit here. We get credit from commercial bank; the bank provides us credit for 6- 8 months only. Construction bank thinks that we are doing well so they are not giving us credit, they give for tractor and the whole money can be spent on that.”



Visitor discussing with Mr. Tewolde, large scale farmer in Bereket

Then participants visited FTC, Haleta, a development agent from central, explained what has been done in the FTC. She said farmers have appreciated what has been done there in different field days.

Then participants visited the field in HuARCs compound in which precision row planter is used to plant the sesame. A person from Hiwot Mechanization explained that it is possible to adjust the planting machine as needed. The planter was adjusted to plant sesame leaving a space of 40 cm between rows and 7 cm between plants. They face some challenges because the seeds should be clean and equal otherwise they block the whole of the planter from which the seeds come out. Some improvements are needed for better use of the planter. After this, participants visited other experimental trials which have been conducted in HuARCs compound.

## 5. Closing Remark

Finally, the field days were officially closed by Dr. Birhanu’s, pulse and oil seed coordinator, from EIAR, brief remark at HuARCs small hall. Dr Birhanu, said they have seen that a lot has been done in the sesame sector in generating technologies. He appreciated the activities done in seed multiplication, pest and disease control, and machinery; however, the efforts that have been done here are not enough when seen vis-à-vis the demand from the farmers’ side. SBN Support Programme, Research Centres and Offices of Agriculture have been doing what they can but a lot more should be done by various stakeholders. He further stated, “In EARI we assign the necessary budget for oil crops; we will provide all the necessary support such as training.” He suggested that concerned bodies should come together and have discussion to further improve the sector. He also promised to inform the mechanization demand of sesame to the mechanization department in EARI.



Dr. Birhanu, giving closing remark

## List of field day attendees

Mr. Martin Koper, from the Netherlands Embassy Addis Ababa  
Dr. Worku Tesema, from the Netherlands Embassy Addis Ababa  
Mr. Ted Schrader, SBN coordinator, CDI, Wageningen University, Netherlands  
Dr. Adugna Wakjira, Deputy Director, EIAR  
Dr. Asnake Fikre, Research Directorate Director, EIAR  
Dr. Bihanu  
Dr. Tilaye T/wold, deputy director ARARI  
Dr. Abrham Abiyu, director, GARC director  
Mr. Addis Teshome, Advisor 2SCALE  
Dr. Ftien Abay, Coordinator, ISSD Mekelle University  
Mr. Mizan Amare, Crop Research Director, TARI  
SBN Support Programme  
Other invited guests from different organizations at federal, regional, zonal and woreda level attended the field visits; attendees are from:  
Research Institutes and Centres  
Bureau of Agriculture  
Banks and MFIs  
AGP  
Trade and Industry  
Administration  
Partner organizations  
Advanta private seed enterprise  
ECX  
Mass media from Amhara Mass Media, Radio Fana and Woreda Communication Office  
Farmers