



# An Analysis of Groundnut Innovation Platform Achievements in Brokering Improved Varieties to Communities in TL III Project in Burkina Faso

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## Abstract

Access to seeds of improved groundnut varieties is the most critical problem of farmers in Burkina Faso. Firstly, majority do not know the existence of improved varieties and secondly the price is not affordable to them. Based on the above, the INERA groundnut breeders' team established four innovation platforms on groundnut in the Region of Centre-East, Region of Centre-North, Region of Centre-West and Region de la Boucle of Mouhoun. Through these platforms, Quality Declared Seeds (QDS) were produced for the first time in Burkina Faso in 2016 with support from the Tropical Legumes phase III (TL III) project. Since then, QDS and certified seeds are produced and sold to the local communities at affordable small packs in order to make improved seeds accessible to the poor farmers. So far about 10,000 persons have been reached with small packs.

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Farmers, agricultural extension and NGO staff have been trained in groundnut seed production, demonstrations, field days and Farmer Participatory Variety Selection (FPVS) to promote the improved varieties and the best agronomic practices. Farmers' yields increased from 500–700 kg/ha to 1200–1500 kg/ha increasing women and youth incomes from 200 USD to 800 USD/year only for those who grow groundnut during the rainy season. Those who grow during rainy and off-seasons their incomes can reach 1200–1500 USD. Links with financial institutions have facilitated access to credit for these farmers. In the future, the Platform sustainability will be assured through members' annual financial contributions and strong production contracts among traders, processors and farmers.

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**Keywords**

MSPs · Seed dissemination · Demonstrations · Field days

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### 3.1 Introduction

Until 1990, groundnut was the number one cash crop in Burkina Faso before cotton (Dyemkouma 2009). From 1990 to 2000, there was no project nor policy /program from Government towards groundnut production/promotion (FAO 2015). Few farmers' groups were interested in groundnut production, for example "Heresso" and "Mogoya" in the Western part of Burkina Faso.

The first problem facing groundnut stakeholders in Burkina Faso is the fact that the organization of farmers' groups is under the responsibility of the Ministry of Agriculture only but the task is huge because farmers are in small groups scattered in villages and districts and do not have official registration from administrative authorities to produce certified seeds. For crops like sesame, maize, cashew... value chains are relatively well structured. The first platform in Burkina Faso was around maize at Léo in the province of Sissili. But this is not the case for the small groups of farmers' organizations around groundnut. On one hand, some groundnut farmers are part of the national seeds producers' organization which is well structured with regional and district representations. On the other hand, groundnut processors and traders are not well organized as national or regional organizations although some localized groups exist. Thus, the concept of groundnut value chain does not exist, and groups are scattered.

The second problem facing groundnut stakeholders is farmers' lack of access to seeds of improved varieties. The mechanism of sharing information and knowledge is often not well functioning (Fayam 2018; Sanaka 2017) so improved varieties are not well promoted. Sometimes, the lack of seeds of improved varieties also parallels the lack of knowledge of improved varieties. This explains the low rate of adoption of improved varieties of about 10% (Fayam 2018; Masa 2013). Finally, only the seed producers who are members of the national seed producers' organization buy

the basic seeds from INERA (the national agricultural research institute) and produce certified seeds under the control of the national seed service, while other farmers can only produce groundnut for consumption.

Another problem is the cost of basic seeds in Burkina Faso which is 2100 in CFA franc (used in former French Colonies in West and Central Africa), the equivalent of approximately four United States Dollars (USD), which is not always affordable for smallholder farmers' groups. A certified seed producer is required by regulation to grow at least 3 ha of groundnut certified seeds which requires an investment of USD 320–400 in basic seeds at a rate of 80–100 kg/ha of unshell groundnut. This is why improved varieties were not well known by farmers and particularly by women who continue to grow their low yielding local varieties in traditional cropping systems. These women are disadvantaged for access to land and to improved varieties because they do not always have the money to buy the seeds of improved varieties and land belongs to men (Masa 2013).

Innovation platforms (also known as Multi-Stakeholders Platforms in our case) are ways to bring together different stakeholders to identify solutions to common problems or to achieve common goals. They ensure that different interests are considered, and various groups contribute to finding solutions (Anonymous 2013). An innovation platform is a dynamic structure including many stakeholders and it allows them to implement the principles of Integrated Agriculture Research for Development (IAR4D). In such a platform, the stakeholders use various methods and approaches to define in a participative way the problems and opportunities in the context of value chains.

The innovation platforms have as fundamental principle to bring together farmers, processors, inputs sellers, certified seed producers, traders, microfinance institutions and decisions makers. They are the place where the stakeholders of the same crop value chain are linked and can meet to discuss about opportunities and problems and make decisions. They are also good channels of seed dissemination in order to reach farmers through their groups or organizations. In these platforms, the entry points are farmers and the exits are processors and traders.

In order to contribute to the organization of groundnut farmers' groups, the groundnut breeders' team of INERA established four Multi-Stakeholders Platforms (MSPs) which are Innovative Platforms, in four administrative regions Region of Centre-East, Region of Centre-North, Region of Centre-West and Region de la Boucle of Mouhoun while two other platforms (Pouni and Gourcy) were jointly established with the cowpea breeders' team. The first one (Region of Centre-East) dates from September 2014. Through these platforms, farmers are continuously trained on groundnut production guidelines, groundnut post-harvest management, and in-field and post-harvest management of aflatoxins. High yielding improved varieties are introduced to farmers and the selection of new varieties is operated through farmer participatory variety selection (FPVS) during the field days organized each year for the duration of TL III project. QDS are an innovation in Burkina Faso through the TL III project. These seeds are produced using basic seeds provided by INERA groundnut breeders' team but instead of the conventional system the seeds are distributed only in local communities in a local seed business system;

the seeds are produced by the farmers of the MSPs, principally by women to reduce the gap between men and women for seeds production, under the control of INERA groundnut breeders' team. Thus, instead of official certification by the national seed service, the groundnut breeders' team guarantees the quality of the QDS.

## 3.2 Establishment of the Platforms

### 3.2.1 Year of the Establishment of the Main MSPs

Four (4) MSPs were established from September 2014 to May 2018 in the main zones of groundnut production in Burkina Faso (Table 3.1).

### 3.2.2 Number of Members at the Establishment

At the time of each platform establishment, 60 persons were invited comprising farmers, processors, traders, agricultural extension staff, political authorities like governors, media, financial institutions and researchers. The leaders of each category were chosen among the 60 persons (Table 3.2).

### 3.2.3 Current Number of Members

By this time, the members have increased to 200 persons in the Region of Centre-East and Region of Centre-North, 180 in the Region of Centre-West (Table 3.3). The platform of Region de la Boucle of Mouhoun was established in 2018 so the membership has not increased for the moment.

### 3.2.4 Number of Women

In each platform, women are the majority members: 70% (140/200) in the Region of Centre-East, 72.5% (145/200) in the Region of Centre-North, 66% in the Region of Centre-West (120/180) and in the Region de la Boucle of Mouhoun (40/60) (Table 3.4).

**Table 3.1** Year of the establishment of the MSPs

Platform	Year of establishment
Region of Centre-East	29–30 September 2014
Region of Centre-North	2–3 February 2016
Region of Centre-West	2–3 May 2016
Region de la Boucle of Mouhoun	17–18 May 2018

**Table 3.2** Number of members at the establishment

Platform	Number of members at the establishment
Region of Centre-East	60
Region of Centre-North	60
Region of Centre-West	60
Region de la Boucle of Mouhoun	60

**Table 3.3** Current number of members in each MSP

Platform	Current number of members
Region of Centre-East	200
Region of Centre-North	200
Region of Centre-West	180
Region de la Boucle of Mouhoun	60

### 3.2.5 Number of Youth (Under 35)

The youth in the platforms are mainly young women who are producing the groundnut. In the Region of Centre-East, they represent 10%, 12.5% in the Region of Centre-North, and 16.7% in both Centre-West and Boucle of Mouhoun regions. The representation of young people in platforms is presented in Table 3.5.

### 3.2.6 Overall Process of the Platform Establishment

The platforms were established in the major zones of groundnut production in Burkina Faso based on the national statistics of groundnut production for 5 years. In this paper, we will focus on the description of the establishment of three (3) MSPs (Region of Centre-East, Region of Centre-North and Region of Centre-West).

Two (2) MSPs (Region of Centre-East and Region of Centre-North) are under the authority of the governors of these regions and the MSP of the Region of Centre-West is under the authority of the high commissioner of the province of Sissili. They represent state authority. The establishment of the MSPs took place during a three (3) days meeting. The first day for the trainings, the second day for group formation and reflections on problems and opportunities and the third day for establishing the governing structure of the MSP. At the establishment the MSPs were composed of farmers, certified seeds producers, input sellers, traders, processors, local media, financial institutions like banks (Ecobank) and microfinance (UNCPB: National Union of Saving Bank of Burkina Faso), research institutes (INERA and IRSAT: Applied Sciences and Technologies Research Institute), the Ministry of Agriculture and NGO representatives. All these categories constitute the core of our platforms. At the end, a statement was read by the governor/high commissioner to mark the

**Table 3.4** Number of women in each MSP

Platform	Number of women
Region of Centre-East	140
Region of Centre-North	145
Region of Centre-West	120
Region de la Boucle of Mouhoun	40

**Table 3.5** Number of youths in each MSP

Platform	Number of youths
Region of Centre-East	20
Region of Centre-North	25
Region of Centre-West	30
Region de la Boucle of Mouhoun	10

official setup of the platform and another statement is read by a representative of all the categories to commit themselves to work for the best functioning of the platform.

### 3.3 Composition, Roles and Responsibilities of the Platform Members

#### 3.3.1 Different Categories of Stakeholder Members of the Platform

The Table 3.6 presents the various categories of platform members. During the establishment of the platform, the stakeholders were trained on the importance of a MSP, how a MSP functions, the importance of groundnut production, groundnut production guidelines, post-harvest management, groundnut disease management and in-field and post-harvest aflatoxin management. A training on farmers' group management was also provided to the participants.

After that, twenty (20) women per MSP were identified specifically for community seed production. These seeds are produced for local use in a local seed business under the quality control of the INERA groundnut breeders' team and the staff of the agricultural services as supervisors. Three (3) other farmers were identified to produce certified seeds under the control of the national seed service for the platform. In order to help the stakeholders to produce or to buy the groundnut, the financial institutions were required to facilitate access to credit at low interest rates because as pointed out by Ouoba et al. (2003) there were issues with the relatively high interest rates and the duration of the processing of the credit, which do not always make it possible for small scale farmers to use credit effectively.

**Table 3.6** Number of members per category in each MSP

Categories of members	Number of representatives at the establishment
Governor or prefect	1
Farmers	20
Traders	15
Processors	15
Local media	2
Financial institutions	2
Research institutes	2
Ministry of Agriculture	2
NGOs	2

**Table 3.7** Composition, roles and responsibilities of the platform members

Categories of members	Roles and responsibilities
Governor or prefect	State authority, supervises the activities of the MSP
Certified seed producers	Produce certified seeds for the MSP, sometimes produce basic seeds for INERA
QDS producers	Produce QDS for the MSP to make seeds accessible for their communities
Traders	Buy and sell the groundnut of the MSP, look for markets
Processors	Buy and process the groundnut of the MSP, look for markets
Local media	Provide information about the activities of the MSP
Financial institutions	Help and facilitate access to credit for the members of the MSP
Research institutes	Lead the research activities, seed production, tests, field days and overall technical support
Ministry of Agriculture	Provision of farmer advisory services and policy directives
NGOs	Follow farmers' activities, advise them and promote groundnut varieties

### 3.3.2 Composition, Roles and Responsibilities of the Platform Members

The roles and responsibilities of different platform members are shown in Table 3.7. The governor or the high commissioner is the moral authority and supervises the meetings of the platform. He also supervises activities of the platform and facilitates linkage of the MSP with other organizations under his authority.

The QDS are community seeds produced using basic seeds provided by the INERA groundnut breeders' team and under their quality control. The agricultural extension staff follow the QDS producers to make sure that the groundnut production guidelines have been well followed by farmers from land preparation to the storage steps. These seeds are used in the local communities but not at the national level. This is a local seed business. It permits farmers to get seeds of improved varieties at low prices in small packs. The producers of these seeds have been trained by INERA groundnut breeders' team on groundnut production technical guidelines,

diseases management, in-field and post-harvest management. The QDS production process started in June 2016. To begin with, twenty (20) women were identified per MSP, to produce the seeds and they were provided with 20 kg of unshelled groundnut and 25 kg of NPK fertilizer by the project. After harvest, the TL III project bought 40 kg from each woman, and gave the produce with fertilizer to two other women for QDS production. So, the numbers of QDS producers tripled, from 20 to 60 producers with 40 being new producers. And the following year, 40 kg were bought by the project from each of the 60 to give to 120 new producers making it a total of 180 producers. That is how the process went on for QDS production. From each producer, 5000 FCFA were collected for the account of the MSPs. The QDS production is done by farmers' organizations like UPPA (Provincial union of groundnut producers), AgroTechDev (Agro Technologie pour le Developpement)... at Léo and by other farmers' organizations under the responsibility of the French NGO FERT at Kaya.

On the other hand, certified seeds are produced by farmers who have the required registration to produce certified seeds with basic seeds under quality control of the national seed service. At the beginning three (3) certified seed producers were chosen in each MSP. This number is increasing because the project trained more than sixty (60) and is still training new certified seed producers. Each producer cultivated at least 3 ha of groundnut. The project also gives them basic seeds and fertilizer. At the end of the season, they reimburse the platform account for seeds and fertilizer received. These certified seeds are bought by the project to distribute to other members of the MSP for QDS production because INERA cannot meet the increasing demand of seeds needed for QDS production.

The processors were linked to seeds producers. They express in advance the quantities they need to process, and the farmers have to produce that for them. This permitted some farmers to boost their production capacity. For example, at Kaya, twenty women coming from different groups of processors expressed a demand of 396 tons of grain for 1 year. In the near future, strong contracts will be established between the two groups.

The NGOs, local seed enterprises and the extension service staff helped with the supervision of seed production by farmers. They are trained together with farmers on groundnut production, groundnut diseases management, post-harvest and aflatoxins management. They control fields, give advice, collect and weigh the harvest of each farmer. They help also with the identification of the new QDS producers in their areas.

The traders buy groundnut from farmers at agreed price and sell it. Some are prospecting regional and international markets. In the near future, strong contracts will be established between the two groups.

The financial institutions were required to facilitate the access to credit for the members of the MSP. They help farmers to gather the qualifying documents needed for credit and advise them on how to organize themselves to get easier access to credit.

The media (mainly local radios) were tasked to inform the local population on all the activities of the MSP. They communicate on the field days, FPVS implemented in the villages, the varieties preferred by farmers and their characteristics. They

inform also the population on the availability of QDS, the amount and the places where they can buy these seeds. They interview farmers, researchers and political authorities about the different activities and broadcast them.

### 3.3.3 Evolution of the Number of Members per Category

The Table 3.8 presents the evolution of the number of platform number per category of stakeholders.

## 3.4 Roles and Responsibilities of Different Stakeholders Participating in the Platform Activities

The Table 3.9 presents the roles and responsibilities of each category of platform member.

### 3.4.1 Platform Governance Structure

The platform is under the authority of the governor or the prefect. Then representatives from farmers, traders, processors, financial institutions, local media, research institutes, extension service staff and NGOs participate in the platform meetings and decision-making. Apart from these meetings, TL III project organized at least two meetings with farmers per year: the first (in January) to evaluate previous season groundnut production by farmers and the second (March or April) to plan the activities of the next rainy season and giving trainings to the new producers.

## 3.5 Platform Activities

### 3.5.1 Trainings of the Platform Members

Each year, the farmers were trained on the technical guidelines of groundnut production, groundnut diseases management, post-harvest management, pre and post-harvest aflatoxins managements during dry season to prepare them for the rainy

**Table 3.8** Evolution of the number of members per category

Stakeholders	Evolution per platform per year		
	2016	2017	2018
Certified seed producers	20	40	60
QDS producers	60	180	540
Extension services staff	20	40	85
NGO	1	1	1
Total of the 3 MSPs	300	783	2058

**Table 3.9** Roles and responsibilities of the steering committee

Stakeholders	Roles and responsibilities
Governor or prefect	State authority who oversees the activities of the platform
QDS producers	Produce QDS to be given to other producers
Certified seeds producers	Produce certified seeds for the platform
Traders	Buy grains from producers and sell them to other persons
Processors	Buy grain from traders and farmers to process into paste, oil, “coura-coura”...
Financial institutions	Facilitate access to credits
Local media	Provide information about the platform
Research institutes	Support MSPs by providing basic seeds, fertilizer, training, field supervisions, seed quality, groundnut processing steps, quality steps— General technical backstopping
Extension services staff	Support farmers with on site timely crop management advise, seed selection, supervision of field activities and data collection.
NGOs	Organize farmers’ groups, supervise them to get good quality seeds
Local seeds enterprises	Support seed producers under their responsibility

season. Then the new farmers receive 20 kg of unshelled groundnut and 25 kg of NPK fertilizer.

### 3.5.2 Basic Seed Production Contract with INERA Research Stations

INERA under the TL III project contracted seed producers and gave them breeder seeds to produce basic seeds. The basic seeds they produced were split in two sets, one to produce certified seed and the other to produce QDS for the benefit of the platform. The quality control of the certified seeds is done by the national seed services and for the QDS, by the INERA groundnut breeders’ team and the agricultural extension staff who follow the farmers. For certified seed producers the production cost was supported by the farmers and when the seeds were sold, the money was split between each farmer (70%) and INERA (30%). For QDS, the production cost was supported by the farmer and the money belongs entirely to the farmer. The amount of basic seed thus increased from 187 tons in 2015 to 395 tons in 2017 to 1056 tons in 2018.

### 3.5.3 QDS Production

At the beginning, we selected 20 women per platform to produce QDS by providing 20 kg of unshelled groundnut as basic seed and 25 kg of NPK fertilizer to each

woman. As agreed, each of these producers provided 40 kg of seeds to two new producers the second year (2017) so the total was 60 producers including 40 new ones per platform. By the third year (2018) there was 180 QDS producers per platform and an overall 540 QDS producers with 140 tons of QDS produced in 2018. The quantity of QDS produced from 2016 to 2019 is 215 tons.

### **3.5.4 Certified Seeds Production**

In each MSP, this activity started with three certified seed producers who produced certified seeds for the MSP. These seeds help to produce R1 and R2 seeds as allowed for self-pollinated crops. The amount of certified seeds increased from 2360 tons in 2015 to 2934 tons in 2017 with now a total amount of 11,404 tons in 2018 from 70 individual producers, 20 farmers' organizations and 1 NGO involved.

### **3.5.5 Tests of Demonstration with Improved Varieties and Improved Technologies**

Since 2015 in the first platforms, demonstration tests were set up in farmers' fields in order to compare improved varieties to farmers' local varieties. Field days were organized for farmers to appreciate and choose the best varieties at vegetative phase and at harvesting time. From these activities conducted in all MSPs during the three (3) years, improved varieties were always preferred by farmers. The varieties chosen by farmers were tested during 2 years at four locations under Nation Performance Trials and were described for Distinction Uniformity Stability. The yields of these varieties are superior to the previously released variety SH 470P. This permitted to register seven new varieties in the national catalogue of varieties (ICGV 91328, ICGV 93305 for aflatoxins tolerance, ICGV 01276 for foliar diseases resistance and ICGV-IS 13806, ICGV-IS 13830, ICGV-IS 13912 and KIEMA for drought tolerance).

A second activity relating to the transfer of improved technologies to farmers was sowing on ridges. It demonstrated to farmers the best way to sow in rows, to apply fertilizer, to weed and to harvest. The production increased to 30% compared to the sowing on flat land.

There were also tests of optimum planting dates which showed that sowing after 20 July risks loss of production due to the likelihood of lack of rains at the maturation time. Planting should therefore be done at the onset of planting rains but before 20th July. A total of 229 demonstrations were implemented (60 in 2016, 94 in 2017 and 75 in 2018) to come up with this recommendation.

### 3.5.6 Field Days

A total of 191 field days with ten varieties each year were organized by the TL III project including those conducted by INERA groundnut breeders' team (27 field days) and more organized by farmers with extension service staff (164 field days) because the breeding team did not have enough time to cover all the field days. The field days gathered women (80–90%) and men (10–20%) and allowed farmers to familiarize themselves with the new varieties. The local media were invited to cover these activities in the presence of the political authorities. This was one of the best ways to promote improved varieties.

### 3.5.7 FPVS

During the 191 FPVS events done during the TL III project implementation (3 in 2015, 21 in 2016, 92 in 2017 and 75 in 2018), farmers indicated their choice of best varieties for pod production, haulm production and other criteria like the colour of the seeds or the oil content. This activity took into account the gender aspects because men and women made their choice separately depending on their own criteria. This permitted to the breeding team to know the strengths and weaknesses of the different varieties used in the FPVS and to use this information for future varietal improvements. The local media were invited to cover these activities in the presence of the political authorities of the regions concerned.

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## 3.6 Facilitation of Platform Activities Including Meetings

Mainly, research scientists in collaboration with extension service staff and the local media helped in the organization of the different activities of the platform. Annual activities were planned then discussed with the steering committee during the committee meeting and adopted. For example, the research team proposed the demonstration tests, field days, FPVS and the varieties to be used in these activities and the extension service staff proposed which farmers can implement these tests on the basis of the facilities they have (lands, level of education, appropriate materials for land preparation, the capacity to gather people for activities, the ability to explain the activity to other persons...), their localities and the calendar of supervisions.

Each year, as described above, the research team organized at least two meetings with the farmers, the first to know the amount of seeds produced during the previous season and the second to plan the activities of the next season.

The steering committee holds a meeting with the representatives of all the different categories to evaluate the activities conducted: what was good, not so good and bad, what and how to improve in the future.

Everyone is free to speak, and solutions and decisions are collectively made. In case of a particular problem, the committee or any category of the platform can hold a meeting to discuss the problem and solve it.

## **3.7 Achievements of the Platform**

### **3.7.1 Access to Knowledge and Advisory Services**

In Burkina Faso, the process of technology dissemination by the Ministry of Agriculture has shown serious limitations so an important agricultural constraint is that many farmers were not informed of the existence of improved varieties, and as a consequence the variety adoption level is still very low across the country. This situation is largely due to the fact that INERA is not part of this Ministry. For example, INERA has to contract the extension service staff (in the Ministry of Agriculture) to implement “farmers’ field schools”, demonstrations... Also, before the TL III project, no NGO was involved in groundnut promotion or production. They were working with maize, cowpea, rice. With this background the groundnut breeders’ team took the opportunity of the TL III project to contract the agricultural service staff, some NGOs like FERT as part of the MSPs to help in this field. They were not trained on groundnut apart from the basic courses taken at the agricultural school but now they learned about groundnut production and improved varieties (maturity duration and major traits). The results are interesting because through this, the agricultural service staff, and the NGOs promoted the improved varieties, helped farmers to measure the size of their production fields, and also helped monitor their activities and gave various advices. This permitted farmers to more than double their yields from 500–700 kg/ha to 1200–1500 kg/ha.

### **3.7.2 Access to Improved Seeds**

In Burkina Faso, before the TL III project access to seeds of improved groundnut varieties was a challenge for farmers because these varieties were not well known by farmers and the price of basic seeds (2100 FCFA, about 4 USD) was not affordable to most farmers to enhance the production of certified seeds. Farmers continue to grow their very low yielding local varieties (500–700 kg/ha) on small areas varying from 0.25 ha to 1 ha (Masa 2013). INERA, through the TL III project, started and emphasized the QDS production to enhance access to seeds of improved varieties by farmers particularly women farmers. QDS made seeds of improved varieties more available for farmers at low price in comparison to certified seeds which are more expensive. It permitted to sell seeds in small packs which was an innovation in Burkina Faso. To increase seed access in remote areas, the TL III project at the beginning (June 2016) chose 20 women from different villages/MSP in the 3 MSPs and gave them seeds and fertilizers to grow QDS after they were trained on groundnut production. From the production of each of these women 40 kg were taken and new producers in other villages were identified and were also given seeds and fertilizers by the project to go on producing QDS after training. So, the seeds became accessible in remote areas. The project targeted to reach farmers with improved varieties seeds at low price (1 USD/kg). This was achieved because when the yields doubled at farmers’ level (from 500–700 kg/ha to 1200–1500 kg/ha), they increased

their profits and they were able to reduce the sale price to 1 USD/kg. On a ¼ ha some women producers got 300 USD. Each year, the number of QDS producers tripled in each MSP in an effort to cover the MSPs areas. The target is to cover all the zones of groundnut production with seeds of improved varieties.

Also, in each MSP, three farmers were selected to produce certified seeds for the MSP. These seeds were also used to reach more farmers through seed events. So far about 10,000 farmers were reached with small packs of groundnut seed, as a new idea and new concept for seeds of improved varieties to reach smallholder farmers. This has boosted groundnut production beyond the MSPs and throughout the country. In the past, farmers were growing groundnut on small areas, especially women farmers. Indeed, after SOFIVAR company closed (Society of Funding and Popularization of Groundnut), groundnut production levels fell, and farmers were not very interested in groundnut beyond their own consumption. SOFIVAR (created in 1985 and closed in 1997) was a public institution dedicated to financing groundnut production (gave seeds, fertilizers, mechanization tools, credits to farmers) and marketing (bought the production of the farmers and gave it to factories to process groundnut into pastes and oil) in Burkina Faso. Since the establishment of MSPs, with the training provided and the collaboration with agricultural extension staff, farmers including women and men are now very interested in groundnut production as seen in their request for seeds of improved varieties with QDS producers (more than 500 women in each MSP requested for seeds from current producers). The areas of production are increasing year after year and by now have reached more than 10,000 ha planted with seeds of improved varieties.

### **3.7.3 Access to Credit**

The processors, traders and farmers were linked with the financial institutions to facilitate the market issues. Now the processors and traders know that groundnut grains are available from farmers and they can express their needs. In the three MSPs, 20 women processors expressed a demand for more than 300 tons per year during a meeting attended by financial institutions (Ecobank, microfinances institutions). This represented USD 300,000. This made a good impression on the financial institutions, so they decided to facilitate access to credit for the seed producers and general farmers, traders and processors and help them with advice. Processors took the initiative to deposit their own transactional funds in an account in order to facilitate access to credit from the bank. The interest rate on loans given to different stakeholders (4%) is below the current market rate because the financial institutions are also part of the MSPs. For now, the groundnut MSPs are serving the national market because the demand is very high for groundnut paste, oil and other processed products. Some are prospecting regional markets.

### **3.7.4 Access to Social Networking**

The MSPs have contributed to create links between different categories of actors or groups that never met before, e.g., farmers, traders, processors, financial institutions and political authorities. This permitted to create farmers' associations, groups and organizations with the official administrative documents showing that their groups have come to existence in order to get credit facilities.

### **3.7.5 Filling the Gender Gap**

The adoption of improved varieties helped with the reinforcement of family mutual assistance. Before they started using improved varieties, women were growing their local low yielding varieties on small farms of size from 0.25 ha to 1 ha maximum. With yield ranging from 500 kg/ha to 700 kg/ha, they could not get a profit from their harvest, so it was essentially used for family consumption. Today, women farmers have been trained in groundnut production and they use the seeds of improved varieties, and their yields have increased to 1200–1500 kg/ha. Through the higher productivity, they have increased their incomes from the sale of groundnut. They are making profit of USD200 to USD800 for rainy season and USD1200–1500 for rainy and off-seasons production and can now cover some of their expense needs on their own. The fact that some women manage to pay for some of their family expenses has improved the relationship between them and their husbands. Women believe that since the adoption of improved varieties, their income levels have increased and their contribution to family spending has increased. This has led to harmony within households. Some women participate in decision-making in the family. Adoption of improved varieties increased women's income and made them more financially independent, less vulnerable and more self-reliant. The introduction of improved varieties has impacts on the main economic activities in all the MSPs areas. Because of this, there is a relatively better endowment of households in agricultural equipment, the use of fertilizers, etc.

The MSPs are more efficient tools than separate production and distribution channels, because of their ability to bring together the stakeholders of many groups. MSP members had their own interests but also worked for the group to be successful. The farmers have been producing because there was a market from traders and processors; in turn those two market players have been assured to access credit facilities from financial institutions, which they could use to buy and store enough groundnut worth the demand over a year. Farmers have been better advised by agricultural service staff because they have been well trained by INERA breeders on groundnut production and were closer to MSPs farmers than to other farmers. In each MSP, there were two kinds of seeds production: firstly, the QDS produced for the local communities in a local seed business; these seeds are sold at low prices at the community level, and secondly the certified seeds produced for a wider market at national level.

### 3.8 Perceptions of Stakeholders

For the farmers, access to seeds of improved varieties at low price through the small packs of QDS was a major innovation. They were trained in groundnut production and supported by agricultural service staff and their yields doubled. The field days helped farmers to know improved varieties that are more productive than their local varieties which are being progressively replaced.

For producers of certified seeds, the fact that they participated in seed fairs made them more visible as source of improved varieties. This permitted to sell a lot of small seeds packs to non-members of MSPs.

For the women, the production gap was closed thanks to the training and the use of improved varieties and fertilizer to produce QDS. Now, they have the same yield as men (1200–1500 kg/ha) and in some areas they even get better yield than men (1700–1800 kg/ha) as seen in the Region of Centre-North and Region of Centre-West. Women have increased their farm size from  $\frac{1}{4}$  ha to  $\frac{1}{2}$  ha and in some cases to 1 ha. They bought themselves fertilizer NPK and applied it in their fields. Consequently, their productivity has increased as well as their incomes to make them more financially independent, less vulnerable and more self-reliant. The annual best farmer awards were all given to women.

The QDS and grains productions are implemented in villages in the MSP zones and information about where to get seeds/grain and price is given by local media (radios members of the MSPs) to farmers. This also reduced travel for the traders and the processors who no longer have to go from markets to markets to get groundnut. In addition, with the access to credit, they can buy at fixed price and store the desired quantities of groundnut and realize profit margins.

For researchers, the benefits included training of farmers in groundnut production, the introduction of QDS and its enhancement with more than 90% of women farmers, the promotion of improved groundnut varieties through field days and seed fairs. Also, with the demonstrations tests, new practices were promoted and used. INERA developed strong collaboration with partners including agricultural service staff, NGOs like FERT, farmers' organizations and certified seed producers.

For the agricultural extension staff, this permitted them to be trained in groundnut production, to better know the improved varieties of INERA and to work closely with farmer organizations. A frank collaboration is now established with INERA for the promotion and dissemination of improved varieties.

To make the platform more sustainable, the focus has been on production and processing. With members' contributions, bank accounts were opened for each category of stakeholders. We think that the processing can pull the production and thus we are moving towards contracts between farmers, traders and processors. Access to credit will help in this field.

### 3.8.1 Reflections on the Process

By now, improved groundnut varieties are better known not only in the platform areas but also across the country through seed fairs, and small packs sold. Farmer interest in groundnut and farmer productivity have significantly increased. Farmers' yields have gone from very low levels (500–700 kg/ha) to double (1200–1500 kg/ha) thanks to training farmer groups. This was possible because during trainings we emphasized the sowing dates and sowing mode and the use of seeds of improved varieties and fertilizers. Before, farmers sowed groundnut in scattered pattern without fertilizer. One key factor was the training of agricultural extension staff in groundnut production which allowed them to better monitor the QDS producers and this increased their yields. The collaboration with agricultural extension staff and NGOs and their implication in the activities have been fruitful for INERA and the project.

The QDS production was a good way to reach farmers in their communities with improved varieties. This helped women to increase their income, and to fill the productivity gap between men and women. Some women used their money to buy bicycles, to pay their children school fees, to buy cattle and feed them with the haulm of groundnut produced. This increased also the adoption rate of improved varieties as the sale of small packs of seeds helped reach about 10,000 persons with improved varieties whereas previously in the same area no more than 200 farmers had access to quality seeds.

The producers of certified seeds, members of the MSPs participated in the seed fairs and were able to promote the improved varieties that they sold in small packs. Some from Kaya obtained rewards like carts, fertilizers from the authorities. Another one bought a tractor with his income from groundnut and sorghum without contracting any credit from a bank.

The demonstrations served as sites for field training to compare the farmers' practices with improved techniques of groundnut production. Sowing on ridges has the advantages to keep water in the soil longer than sowing on flat soil and it improves also the quantity harvested by minimizing pod loss. Farmers who previously did not apply fertilizer on groundnut are now adopting the application of NPK and realizing a 30% yield increase. The field days and FPVS permitted to promote not only improved varieties but also to know the preference of farmers. This was useful for us breeders. During field days, 3500 flyers on groundnut production and post-harvest management were distributed to farmers, agricultural and NGO staff.

The link established with financial institutions allowed farmers to access credit with very low interest rates. Some processors opened a bank account and deposited their own funds to support their group activities. Based on this they can get credit to buy groundnut at the harvest time and store it for their activities.

### **3.8.2 Areas to Focus on in the Future**

We will continue to reinforce the link between financial institutions and processors, traders and processors. The focus will be the financial contribution of each member to the platform after selling their produce. This way they will be able to support their meetings without external financial support. Once the traders and processors get strong contracts with farmers and they reach regional or international markets, groundnut production will be pulled upward. Additional and newer varieties released will be introduced in the QDS production channel to replace the old ones. So little by little, we will cover all the platform zones and surely the country with improved varieties. The accessibility of seeds of improved varieties by farmers at low price is our target through the platforms as well as to increase the income of women who are the largest group among groundnut farmers.

### **3.8.3 Lessons Learned**

The QDS production increased the supply of seeds of improved varieties beyond what used to be available only from the certified seeds producers or farmer saved seeds in Burkina Faso. Improved seed access for smallholder farmers has also increased as of now, smallholder farmers are able to buy seeds in small packs. The small seed packs are the best way to promote improved varieties. With these packs, about 10,000 persons were reached with improved varieties in the MSP regions. With these packs poor smallholder farmers bought seeds of improved varieties for their own production to replace their local varieties.

A strong collaboration between agricultural extension staff, farmers' organizations and NGOs has been established. Their capacity has been reinforced in groundnut production using the improved groundnut varieties of INERA. They were trained in an approach of training of trainers so they can advise farmers and organize field days without INERA assistance.

The QDS permitted to fill the gender yield gap and increase the income of women involved in this production. Women's contribution to family spending capacity has increased. This has led to harmony within households. Some women participate in decision-making in the family. Adoption of improved varieties increased women's income and made them more financially independent, less vulnerable and more self-reliant.

To increase farmers' productivity, they have to be trained. Trained women doubled their yields by following the technical guidelines of groundnut production and applying fertilizer. One of the certified seed producers indicated his yield went from 500–700 kg/ha to 1200–1500 kg/ha after receiving and following the training given. During the training, we focus on the sowing dates and the sowing modes which permit farmers to know the best sowing dates instead of their old habits of sowing in the last decade of July.

## References

- Anonymous (2013). Innovation platforms practice brief 1, November 2013
- Dyemkouma D (2009) Rétrospective sur les activités de la SOFIVAR et perspectives
- FAO (2015) Analyse des incitations par les prix pour l'arachide au Burkina Faso. Série de notes techniques, SAPAA. By Kindo Y., Mas Aparisi A., Rome
- Fayam T (2018) Innovations agricoles, entre politiques publiques et logiques d'adoption face aux innovations agricoles céréalières dans la commune de Banfora, Thèse de doctorat Unique de sociologie, ED/LESHCO, Université Ouaga 1 Pr Joseph Ki-Zerbo, 347p
- MASA (2013) Situation de référence des principales filières agro-sylvo-pastorales et halieutiques au Burkina Faso
- Ouoba R, Tani M., Toure Z. (2003). Analyse stratégique des enjeux lies au genre au Burkina Faso, rapport définitif, 105p
- Sanaka D (2017) Analyse du système de vulgarisation à l'Ouest du Burkina Faso, Rapport de stage, INERA, 61p

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