



A fieldworker and member producers in a test field

Increasing agricultural production through ICT

Lessons learned from a farmers' federation in Burkina Faso

This brief describes the lessons learned from the Sissili Vala Kori project supported by IICD in Burkina Faso. It is intended for all actors in the field of agriculture and rural development as well as institutions implementing a similar project, who are interested in learning from the experience of this project.

Lessons have been learned during monitoring and evaluation activities conducted by the project with assistance from IICD and its partner in monitoring and evaluation at the national level. On the one hand, the monitoring and evaluation system consists of questionnaires filled out anonymously by the end users of the project (on an annual basis) and a report analyzing data from these questionnaires. This report contains information on the users' profiles, their use of project services and their satisfaction with services provided, as well as on the impact perceived. On the other hand, it entails focus group meetings attended by project staff and

end users. The purpose of these focus group meetings is to reflect on data, discuss the successes of the project as well as its challenges, and brainstorm on subsequent steps toward improving the project.

Many other lessons have been learned in the course of the execution of the project, the most important of which are captured in this report.

Context

The Sissili area is one of the most humid provinces in Burkina Faso. This part of the country still has a sizeable



vegetation cover. These two factors contribute to making Sissili an agricultural province per excellence. However, producers' organizations are still in their initial stages of formation and the impact of the promotion of market farming remains weak. Producers have very limited access to strategic information that would enable them to plan and improve production and, consequently, introduce into the market the right products at the right time.

Therefore FEPPASI (Provincial Federation of Agricultural Producers of Sissili) has identified, among its strategic areas, information, training and communication as the best ways of strengthening farmer organizations and improving agricultural production conditions. Following the Round Table discussions on the use of ICT (Information and Communication Technology) for the promotion of the agricultural world organized by IICD in Bobo Dioulasso in 2003, FEPPASI has implemented a rural information and communication project called "Sissili Vala Kori" (the voice of the Sissili farmer).

FEPPASI is a farmers' organization founded in 1998 in Leo, the capital town of the province of Sissili. It brings together producers of the seven communes in the province and has about 12,000 members, a quarter of whom are women (3,700). It seeks to improve the living conditions of producers in the Sissili area by supporting them to move from subsistence farming to market farming, through the following activities:

- **Agricultural technology transfer:** this transfer is made in collaboration with INERA (National Institute of Environment and Agricultural Research) through the introduction of varieties testing and farm monitoring. The objective is to identify high-yielding varieties in order to popularize them among producers.
- **Family farm management (GEFA):** GEFA is a techno-economic tool. It is intended to help producers make predictions about crop-yield speculations and to determine the amount of inputs to invest for the crop year. It also entails providing assistance to producers in accounting pertaining to farm business and fertilizers, and the technical monitoring of farming activities.
- **Training courses:** These include, among other courses, technical training in the area of crop production (maize, sorghum, sesame, etc.) and literacy.

Since 2005, FEPPASI has been testing the potential of ICT to educate, train and professionalize farmers.

Country Profile of Burkina Faso

Burkina Faso Statistics

| | |
|--------------------------------|-------------------------|
| Area (km ²): | 274 000 km ² |
| Total Population: | 15,2 million |
| Life Expectancy: | 52 ans |
| Net Enrollment Ratio (primary) | 37% |

Source: World Development Indicators database, 2008

Access to communication technologies per 100 persons

| | |
|---------------------------|----|
| Mobile phone subscribers: | 17 |
| Internet users: | 1 |

Source: ITU, 2008

Project Information

| | |
|----------------------|---|
| Number of end users: | 20,000 |
| Target groups : | staff and members of FEPPASI and development actors in the province (such as technical services, NGOs, farmers / producers) |

Project objectives

During the pilot phase of the project, FEPPASI implemented start-up activities aimed primarily at strengthening information flows within the structure.

Thus, the following activities were implemented:

- Equip the Federation center in Leo with audiovisual animation
- Provide leadership support in agriculture, livestock, etc.
- Equip FEPPASI with an Internet connection to enable gathering information on a permanent basis from other institutions that are specialists in agriculture
- Subscribe FEPPASI to magazines, periodicals and publications on agriculture
- Establish an information processing unit
- Establish a communication mechanism for technical information and communication in rural areas
- Create two pilot rural telecentres for county producer unions
- Train leaders in information and communication technology and multimedia
- Create a website for FEPPASI
- Bring to fruition the Sissili Vala Kori newsletter.



A family on their land

In the second phase of the project the following activities were implemented :

- Completion of the FEPPASI members' database and their field activities
- Training of members of the management team in management techniques and marketing for FEPPASI's services promotion
- Establishment of a wireless network (WiFi) to expand Internet connection
- Development of a marketing plan to promote the network and wireless services of FEPPASI
- Updating the website.

Project Outcomes

The headquarters of FEPPASI in Leo and one of its regional offices in Boura (50 km west of Leo) are connected to the Internet. Both offices serve as an information center and make their computers available to members.

During the first two years of the project, FEPPASI offered training courses to 150 producers in computer skills and multimedia. These courses have obviously raised expectations for connectivity and access to equipment, which FEPPASI was not able to meet at the time since it had a mere dial-up and unstable Internet connection and only two computers per center. Many people have been trained; however they were not able to put their training to practice because of the remoteness of the areas and the cost of access to these services.

In 2009, during the second phase, the Leo and Boura dial-up connections were replaced by VSAT connections. Given the cost of this type of connection, FEPPASI tried to recoup its costs by sharing bandwidth with other

neighboring organizations for a fee. Consequently, three organizations were connected to Leo and two others to Boura. All of these subscribers pay 20,000 francs CFA per month to FEPPASI.

After the basic computer skills training, FEPPASI then focused its attention on the training of trainers to produce and update educational materials on production, fertilization, preservation and processing techniques. FEPPASI works with advisors and facilitators, who train and advise farmers in their respective communes. Since these advisors are their neighbors, their views are accepted and more confidence is reposed in their approach than in agents from the capital. In the Sissili Vala Kori project, the group of advisors were trained in basic ICT skills to enable them produce training materials.

Within the space of three years, the Federation's trainers have trained some 8,000 farmers (2,500 of whom are supervised directly by the Federation's advisors and leaders) in innovative techniques of food production and processing, sales techniques, organic fertilizer production, as well as in techniques for sustainable management of natural resources, by using videos, photos and other digital media.

"Formerly, people used to fall asleep during our training sessions," says Korotimi Douamba, former FEPPASI assessor, who has followed the project from the beginning to the end of the first phase. "With the camera, we can show pictures of the evolution of test plots. In our brainstorming meetings with producers, we compare visual images. We project the pictures and discuss the reasons for the failure or success of each plot. Agricultural techniques are also filmed and we project these videos during the training sessions." Douamba adds that in the past it was difficult to convince



A farmer on his land

producers by merely telling them that the yield per hectare was better in the next village. Today, the improvement can be seen with the eye, thanks to the pictures. The visual approach also helps overcome problems relating to the comprehension of certain topics in a province where nearly 80% of producers do not read nor write. According to trainer Mahamoudou Korogho, digital media has become an essential component of his work. "I do not feel comfortable if I do not have a computer to carry out my training sessions," he said. "When I show pictures of excellent farms, the participants applaud."

Thanks to its website and its newsletter, "Sissili Vala Kori" (the voice of Sissili producers), transparency and trust within the organisation have been enhanced, FEPPASI has become popular and its contacts have increased both in Burkina Faso and abroad.

The federation has also expanded the telecentre in its headquarters by making seven computers available to members.

GPS is used to map out farms. The digital photos serve as a link between FEPPASI and the agricultural research station. By receiving on-the-ground photos sent through e-mail on a regular basis, the agricultural research station is able to monitor farms without moving from one place to the other.

The family farm database has been created, and it is fed with data. Today FEPPASI information and documents are also stored on the Synology Server (www.synology.com).

Impact

*« For us, ICT is the basis of agricultural development »
Moussa Joseph Dagano, President of FEPPASI.*

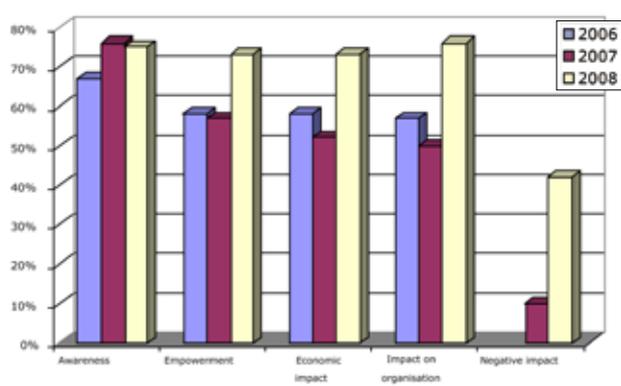
According to FEPPASI, the use of multimedia has greatly increased the number of trained people, reduced the duration of courses, and increased their impact. Success stories abound. The results of monitoring and evaluation indicate that trained farmers were able to double or even triple their production.

In some anonymous questionnaires collated in 2006, 2007 and 2008, producers explain how they put their training to good use. "I found some online contacts to sell my almonds and my shea butter" says one of them. "I used farming techniques to cultivate yellow corn and white corn," said another. Yet another farmer, who now processes yam into flour, couscous and cakes, has increased his income through the application of new business methods: "The products are better presented, better labeled, and I sell better." An impact study conducted by INERA revealed that, on average, agricultural production of maize increased from 0.5 tons per hectare in 2003 to 4.5 tons per hectare in 2007.

Sissili producers have also used the Internet to develop techniques for selecting and improving the quality of seeds using the best varieties. Producer Moumouni Niébié, for example, has searched and found on the web a Beninese organisation specializing in the methods of yam production. Niébié contacted this organisation to learn how to produce yam seedlings from root pieces. To further improve the quality of seeds used by members of the federation, FEPPASI took pictures of several varieties and selected the best of them. Niébié's corn field is among the plots selected. Niébié:

The screenshot shows the FEPPASI database interface. At the top, there is a header with the FEPPASI logo and several icons representing different agricultural activities. Below the header, there is a navigation menu with the option 'EXPLOITANTS AGRICOLES' selected. The main part of the interface is a table with columns for 'Nom', 'Sexe', 'Age', 'Stat', 'Niveau', 'Langue parlée', 'Niveau scolaire', 'Niveau', 'Statut', 'Membre', and 'Statut'. The table contains several rows of data, each representing an agricultural exploitant. The interface also includes a search bar and a list of filters at the bottom.

A screenshot of the database



Impact of the Sissili Vala Kori project from 2006 to 2008

“FEPPASI selected individual producers who mastered the new production techniques and then guided them to produce better seeds, so that other farmers could also have access to good quality seeds.”

FEPPASI’s peasant advisors act as intermediaries between the peasantry and INERA. When a plant falls sick, the advisor takes a picture of it and mails it to the research institute. If the institute receives multiple photos from different villages, it becomes aware that an outbreak has been reported on a certain variety and therefore takes steps to limit the damage.

One impact that has been felt within the organization is the improved competence of agents and advisors following the introduction of ICT. These professionals in the region did not lack a general knowledge, but since they do not come from that locality and were not trained in ICT, they often lacked some key information about the situation on the ground. FEPPASI’s agricultural innovation and information gathering and sharing techniques enable these agents to be much better informed. This makes FEPPASI recognized for this expertise at the national level too.

The graph indicates the opinions of the beneficiaries on the impact of FEPPASI, collected through questionnaires in 2006, 2007 and 2008. The slight decrease recorded in the areas of capacity building, economic impact and impact on organisation from 2006 to 2007 can be explained by the expectations created by the ICT training, which was not accompanied by the provision of sufficient access to equipment and the Internet by the federation. In the questionnaires for monitoring and evaluation, a farmer illustrates this challenge: “I have partially achieved my goals.

First I discovered the great opportunities offered by the Internet and digital photography. On the other hand, I have a difficulty in accessing the Internet because we do not have connection.”

Initially FEPPASI wanted to create information centers where farmers could directly access the relevant data. Over time, however, it is another model that has been developed. Only a minority of literate farmers go to the centers to look for business opportunities and to network with buyers and sellers nationally and internationally. The majority of members, who are illiterate, benefit indirectly from the centers, thanks to the availability of training courses. The enrichment of educational materials with visuals, resulting in increased quality technical training, contributed to a more positive impact in 2008. In the focus group meeting of 2008, beneficiaries of the project spoke about the negative impact that increased significantly in 2008 compared to 2007. Among the reasons adduced were the lack of access to the Internet and the lack of regular Internet connection resulting from the failure of the fixed telephone system. Among the solutions proposed were the installation of VSAT (installed in 2009), and the provision of Internet connection to representatives of all communes (which is still a challenge).

Lessons learned

Several lessons can be learned from the activities of FEPPASI over the past four years:

Visionary leadership

The President of the Federation, Moussa Joseph Dagano, understood the importance of ICT well before most of his counterparts. Producers and donors did not immediately realize the benefits of ICT when the President started using it in 2005. An old anecdote that circulates in the Federation has it that one day, a donor said: “Farmers need food, not computers!” Joseph Moussa Dagano knew where he wanted to lead his organization and he has therefore persisted in spite of the reservations expressed at the initial stages.

ICT as a catalyst for development

What is the contribution of the ICT component to the development of FEPPASI and its members? It is a difficult question to answer. Certainly, FEPPASI would equally have trained its members without the use of ICT, albeit at a different pace, on a more limited scale, and with limited teaching materials. Comparing the present structure with that of 2005, a change in the dynamics can particularly be felt.

FEPPASI is now connected to the world. It is no longer isolated and has become part of national and international networks, in which its activities are recognized and valued. This belief seems to have strengthened the self-confidence of both employees and members, thus creating leaders who are confident of their ability to change the world. The impact of this has not been fully assessed and a more thorough evaluation would be required in the future.

The process approach: the gradual integration of ICT in the organization

FEPPASI was able to integrate ICT at its own pace, gradually assessing the options and learning to make the best of them. The objectives set at the beginning of the project have changed over time, with the ownership of certain applications giving rise to new ambitions. This would have been unimaginable at the start: the Federation needed time to “digest” the technology, to acquire the competences and to see how ICT could best serve its interests.

Trust: the farmers themselves assume ownership and determine the content of production techniques

Coming from the capital, the agricultural consultants from government agencies were not familiar with the peculiar conditions of the province. FEPPASI decided to invest in its own research and its own training (i.e. in ICT) and to develop its own teaching materials. The Federation’s consultants have similar characteristics with the producers, they speak the same language with the same accent, and recount their own experiences. Producers are more likely to adopt new production techniques when they are advised by people they consider one of their own. Thanks to the improvement in research and in the courses taught by their peers, Sissili producers have improved the quality of seeds, cultivating new varieties that better reflect local climatic and soil conditions.

The power of pictures

According to Korotimi Douamba, producers apply all their energy to the proper use of production technologies in order that their beautiful farms will be photographed and seen by other producers. The farmers get the feeling that their services are highly valued, thanks to these pictures. This situation has led to a tacit competition among producers, and this helps develop the expertise of the farmer. Another effect of the use of pictures was detected in the area of training sessions in the villages. These sessions are followed not only by the producers but also by their wives, their

children, their neighbors. This expanded participation helps to get everyone involved; farming becomes a true family business in which everyone’s advice and ideas are highly valued.

Financial sustainability through contributions and paid services

FEPPASI seeks to improve the lives of its farmer-members by helping them to move from subsistence farming to market agriculture. Through the training, members graduate to a market agriculture, and become increasingly able to pay their FEPPASI dues. It is these contributions that FEPPASI uses to maintain its equipment and the operational costs of the cyber center. FEPPASI offers producers paid services such as Internet access in the cyber center. An enterprise that is independent of FEPPASI was also created in 2006 to market agricultural products. FEPPASI provides advisory support to this enterprise.

IICD’s approach includes the implementation of pilot projects, capacity building of partners, and networking and knowledge sharing between local partners (and other organizations that adopt ICT for development). Sulga Concept, a training partner, provided technical and moral support to FEPPASI.

During the Burkina-NTIC (the national network of ICT for development) exchange sessions, member organizations share their challenges and ideas. For instance, FEPPASI recently started organising night sessions to raise awareness in the villages using a projector and a generator, a concept borrowed from the Sahel Solidarity, a network partner. Korotimi Douamba says: « The network has been a great motivator, and now it’s like family ».

Challenges

From farmers’ Federation to Internet service provider

In 2009, the dial-up connections to Leo and Boura were replaced by VSAT connections. Given the cost of this type of connection, FEPPASI wanted to recoup its costs by sharing bandwidth with other neighboring organizations at a fee. The demand for access to bandwidth is high: around fifteen organizations have asked to be connected. The Federation has decided to increase the wireless terminals and provide access to organisations that request them. It has thus evolved into an Internet services provider, with positive results for its connectivity, but at the risk of turning away from its primary objectives.



FEPPASI members share the Sissili Vala Kori quarterly

Information Management

Producer trainers go to the center of the Federation to create and store visual content tailored to local conditions and based on local research. For now, not all educational materials are stored in a central system: the trainers are reluctant to share their material with colleagues or to put it online. FEPPASI should define an institutional policy on knowledge management to encourage and guide trainers and extension workers in the processing and sharing of content.

Although farmers are cultivating new varieties, the increase in output does not necessarily translate into increased revenues. For incomes to increase, the Federation resorts to ICT once again to improve marketing and sales. In the course of the past few years, FEPPASI has been helping producers at the individual level to collect data on production, on costs and on revenues; an initiative that facilitates marketing at the individual level. A computer database was created at the offices of FEPPASI to facilitate batch selling, but a new challenge arises at the level of data collection and analysis. At the present time, the communications director, who has many other tasks, is the only officer carrying out the task of data collection and entry of all members into the system. FEPPASI must therefore develop a strategy for collecting and managing information.

Future expectations

It has been four years since the Federation started using ICT; the next step will witness the full use of the database, which will make it possible to carry out performance and productivity calculations and projections for the entire province. With this data, FEPPASI will be in a better position to obtain credit for its members by grouping them and by selling their products in large quantities.

In spite of the difficulties facing it, FEPPASI has not abandoned the idea of setting up information centers in all seven communes, where the facilitators and producers could directly access the relevant data. FEPPASI also examines the options of integrating the mobile phone in its information and internal communication systems in a more systematic manner.

The lessons show that the successes achieved by the Sissili producers with the help of FEPPASI are not solely the result of technology but, above all, a clear vision of the objective pursued by the Federation and how ICTs could contribute to achieving that objective, taking into account the importance of local trainers, locally-developed content and local support while considering the possibility of reframing the objective to respond to the circumstances. The rich experience of FEPPASI may be an example for farmers' organisations in Burkina Faso and around the world.



An example of a test plot

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Links

FEPPASI : www.feppasi.org

Project video : <http://www.vimeo.com/7161456>

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