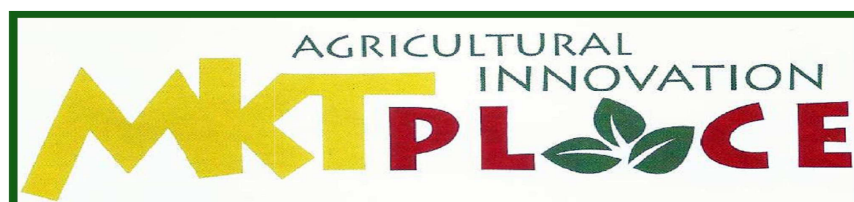




Template to document the case studies of consortia/ULP
 (Draft document adapted from PAEPARD Guidelines for Publications, Communication and Advocacy)



LOCAL SEEDS VALUE CHAIN PROMOTION:

**Farmers led breeding and distribution of
green pepper and red pepper varieties**



2016 - 2017



Brazil

&



Togo

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Executive summary

Pepper (*Capsicum* spp.) is a high profitability commodity. Widely consumed in Togo, local varieties are preferred; but no bred seeds are available on the Togolese market and no breeding program are conducted in the country. Only farmers perpetuate *Capsicum* genetic resource through bulk selection. The global objective was to improve pepper small holders' farmers' incomes by improving pepper productivity through variety selection.

More specifically, the project strived to:

- Select local varieties of red pepper and varieties of green pepper (through 2 cycles of mass selection);
- Select cultivars of chile pepper and bell pepper cultivars from Brazil;
- Train farmers for seed production and replication;
- Improve in long term, small holder pepper farmers' income.

By a participative research approach, the following activities had been implemented:

- Pepper production assessment in the 05 regions of Togo had been done.
- 05 local varieties of red pepper have been selected and bred. 05 Brazilian varieties had been selected by farmers as adapted to their conditions and needs
- 18 cultivars from Embrapa (Brazil) and 19 local varieties had been evaluated;
- Train 30 farmers' leaders for seed production and replication

This experience proves that farmers are always ready to learn and apply. Brazil team iterative assistance improved technology use and the way research have been run.

As learn lesson, the user led approach through multistakeholders research for development that connects African team to a developed country team, had at once many impacts before the end of the project: as each actors participate actively for the reason that its interest is directly linked to the results.

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I. Introduction

Since 2007, CASADD-VR has developed a multi-stakeholder network (farmers, farm input suppliers, processors, microfinance institutions and traders) around pepper in Togo with the support of the IFDC project I000S+ (see IFDC Report 35 (3): 8–9

From 2014 to 2025, CASADDVR has implemented an EU project in Togo on advocacy for improvement of business environment to foster domestic SMEs incubation as poverty reduction tool.

In 2015 CASADD-VR has lead other consortium of 6 NGO in central region of Togo to implement climate changes mitigation activities. This partnership was funded by IFAD/ GEF through Agriculture ministry of Togo program ADAPT/PADAT. Several activities have been implemented with communities and farmers.

II. Project description

2.1. Background and the definition of the problem

In Togo, people consume regularly pepper day and noon. Therefore, pepper growing is very widespread. There are almost 75,000 smallholder pepper farmers.

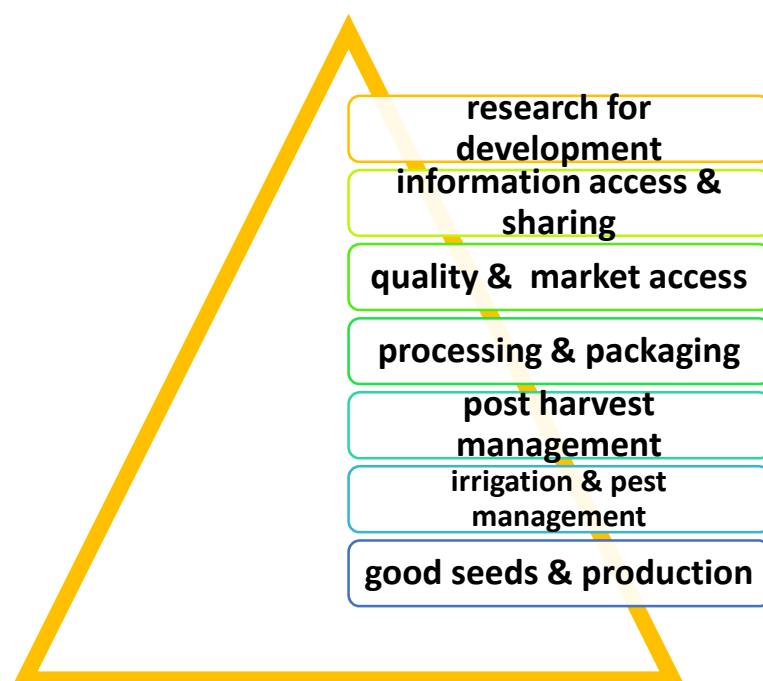
The pepper value chain development consortium started in 1998 on an idea a women's group to create the AGROCOMPLEX group for local products. The inability to obtain raw material regularly, inspired the present coordinator, AGOSSOU Affo Bindé, and then member of the group to create a tandem with producers to bring their complementarity in. The Chilli Producers, member of the group, decided to create a network named CASADD-VR in 2002. At that time the network had 3 groups: one processing group and two farmers groups. The processing group mutated into a business to improve the level of investment and the quality of processed products. Thus in 2006 the AGROCOMPLEX group company was created providing ways to improve the product and closely related to the pepper producers

From 2006 to 2010, the IFDC's project "I000s+" developed (CASE) approach which objective was to improve the livelihoods of 1 million farm households. Capsicum spp., was one of focused commodity. Though pepper farms are often modest (0.25 ha to 02 ha), but are 60 to 70% of farmers' income (**Maatman and Al, 2011**).

At the end of I000s+ project, although important results has been achieved, many challenges still to be fixed. Then, PAEPARD first call for proposals was an important opportunity that helps the consortium to continue working on its challenges. PAEPARD partnership inception workshop of Lome held in October 2011, was the real first formal

research for development meeting of the pepper value chain actors. This occasion has enabled identification of several problems as described below:

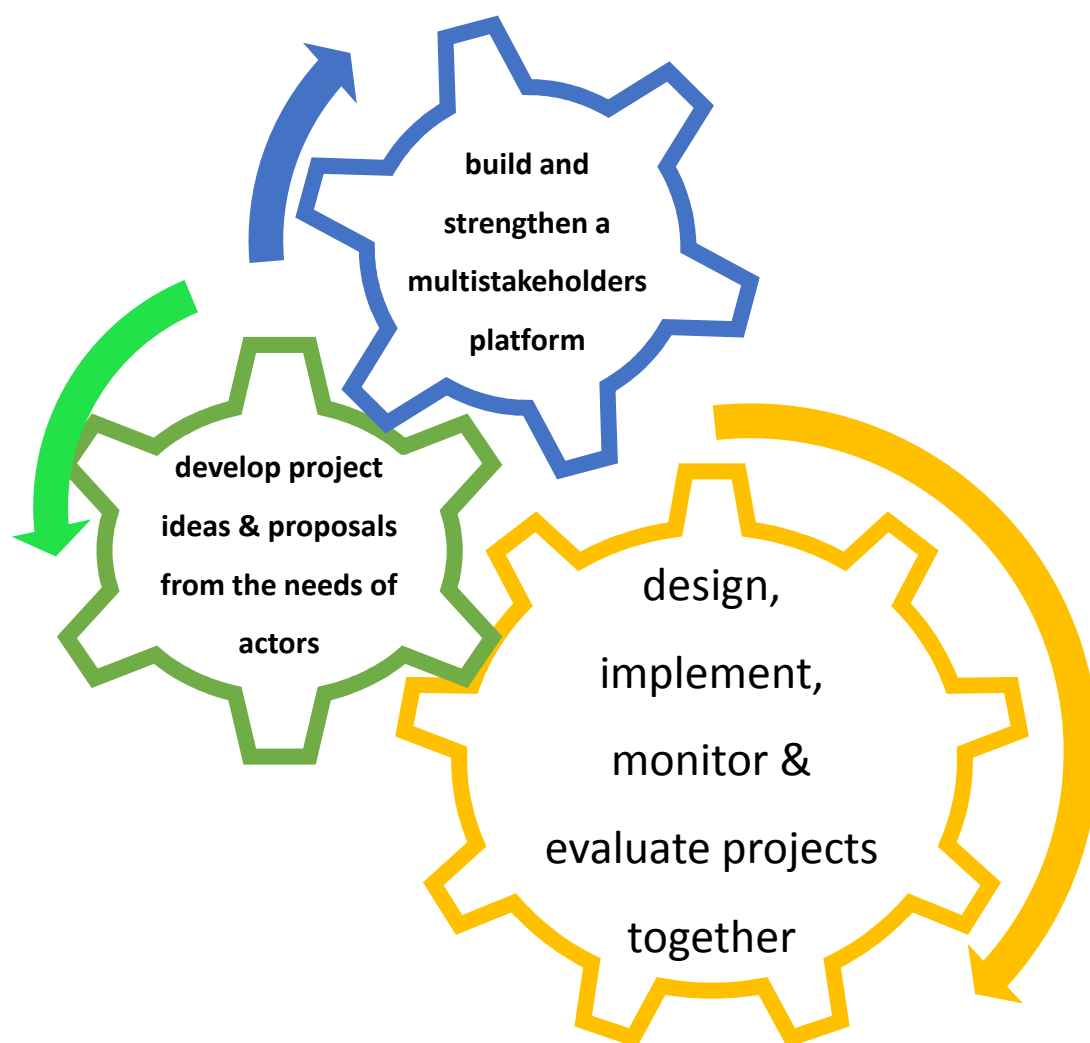
Figure 1: the main challenges identified in 2011



From CASE approach the consortium adopted the research for development by user led approach as strategy. This new strategy has three main aspects:

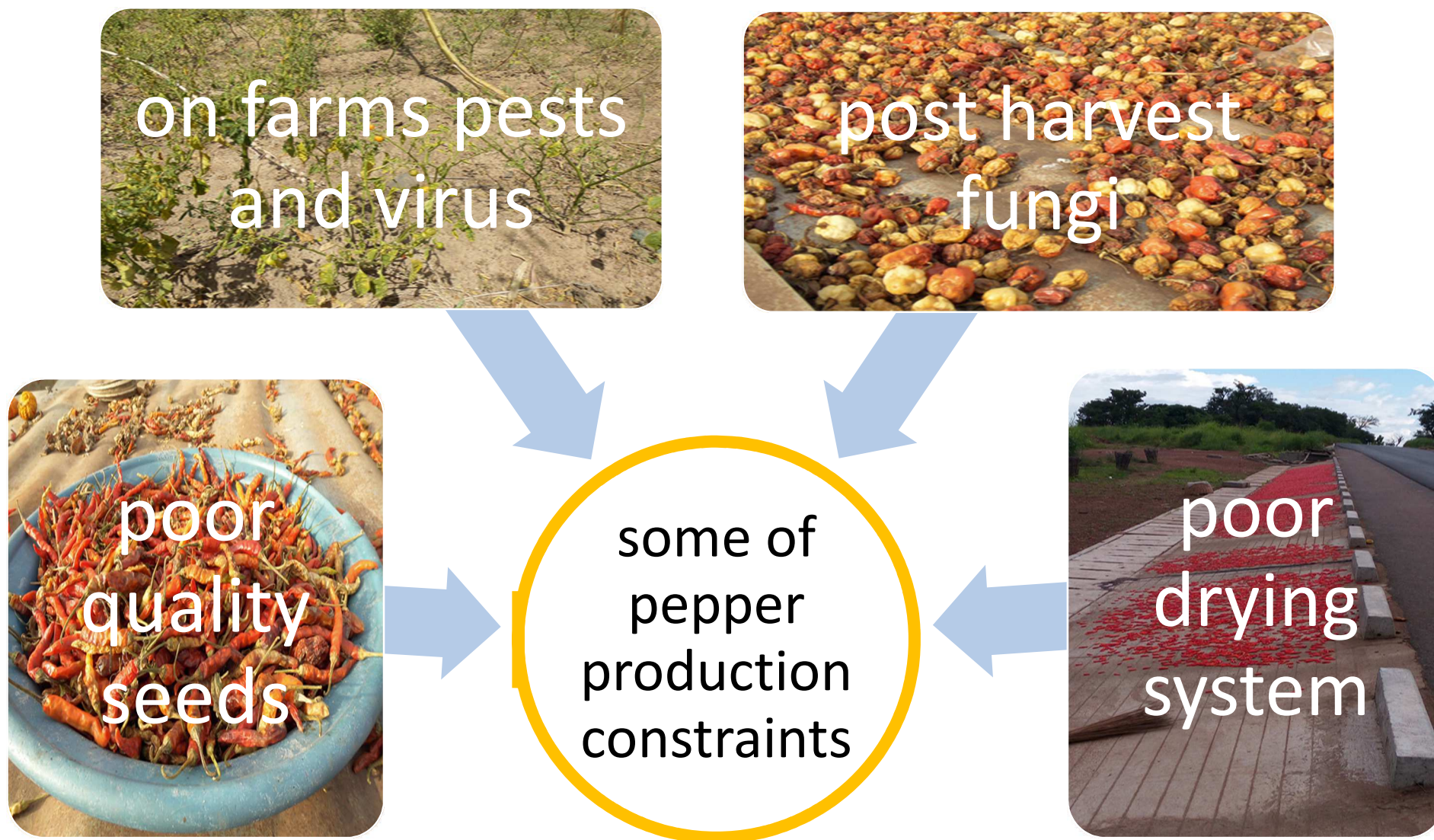
- To build and strengthen a multistakeholders platform around pepper value chain
- to develop project ideas and proposals from the current needs of beneficiaries and actors
- to design, implement, monitor and evaluate projects processes together

Figure 2: the consortium strategy framework



Since then there, many tentative to propose research for development project had been done. The best opportunity that have met the consortium expectation is the **(Africa and Brazil) MARKETPlace call in 2014**. CASADDVR has presented jointly with EMBRAPA team a project untitled: **local value seeds promotion: farmers led breeding and distribution of green pepper and red pepper varieties**.

Figure 3: some of pepper production constraints



This focused one of great problem of production: seeds access and breeding. Indeed, hot and bell peppers yield are often low with poor fruit quality due to the absence of the improved local cultivars. Though, Local pepper are preferred by consumers; seeds are not available on market because no breeding research is done. Only farmers are perpetuating seeds through bulk selection. Imported varieties are expensive and out of reach to most of farmers. To solve these problems, it was crucial to avail for farmers improved pepper cultivars with characteristics of interest for critical evaluation and adoption, which will depend on the availability of good quality seeds. The promotion strategy will be based on participatory variety selection, farmers' discussion, training of farmers for seed production. High quality seeds should be available to farmers for higher income and food security

2.2. Objectives of the project

The global objective was to improve small holders' farmers' incomes by improving pepper productivity.

More specifically the project short term objectives were:

- Select two varieties of red pepper and two varieties of green pepper from local populations through two cycles of mass selection;
- Select at least two improved chile pepper and two bell pepper cultivars from Brazil;
- Train Togo farmers for seed production and replication of bred varieties;

As for long term the project strives to improve the income of small holder pepper farmers by 20%.

2.3. Stakeholders involved (This section should describe)

According to the consortium strategy, this project had involved many stakeholder at each level. The **table I** states the role and responsibility of each actor.

Table I: the **main stakeholders involved in the project**

N	stakeholders involved	Roles & responsibilities
1	NGO CASADDVR	<ul style="list-style-type: none"> • Overall management and coordination • offer to graduate and post graduate students a work environment and material support for scientific work, field experimentation and connect researchers to the farmers • coordinate funding seeking opportunities and make them known to other members • Communication with partners and ensure information dissemination about the work of the consortium • Ensure proper implementation monitoring of the project, delivering of outputs and reporting
2	EMBRAPA Hortaliças	<ul style="list-style-type: none"> • research and technical partner on vegetable breeding, development of growing technology to provide technical assistance on varieties selection • technology assistance and transfer
3	Lomé University (ESA-UL)	<ul style="list-style-type: none"> • provide trainees student and tutors on the implementation of the research project • Fulfill the academic and research requirements feature of the project.
5	Farmer's organization:	<p>As a part of trials have been performed on the farmers' fields, the farmers responsibilities are to:</p> <ul style="list-style-type: none"> • take care to the fields and prophylactic pest management • perform weeding, fertilizers application, to assist technicians record data on the fields • lead the choice of the best and performant varieties and practices according to their needs
6	Private company: AGROCOMPLEX	process seeds and manage the market and administrative requirement aspect of seeds production: collect, sorting; packaging and distribution of labeled seeds
7	Central regional direction of agriculture & Togo national seeds direction	<ul style="list-style-type: none"> • Assist the project as official representative of ministry. <p>monitor activities and to record them in national policy agenda and reports</p> <ul style="list-style-type: none"> • deliver seeds import/export (germplasms exchange) permit and seeds quality monitoring and checking
8	MKTPlace and FARA	Perform brokerage, administrative monitoring, financial monitoring, project process monitoring and evaluation.

3. Project progress

From 2015 to 2017 several activities had been implemented.

3.1. Activities and Results:

3.1.1. Activity I: Assessment of pepper production in the 05 regions of Togo through a survey in the farming communities:

The activity I has generated outcomes as:

- pepper varieties and their production problems have been identified
- farmers socio-economics typology has been known
- Best farmers with broad knowledge about pepper production, accessible to new technologies and exercising leadership in their community to be potential diffuser of new technologies have been identified.



Photo 1 : survey of pepper production assessment in rural region

3.1.2. Activity 2: Local varieties selection:

The activity 2 has generated outcomes as:

- 18 Togo local varieties have been collected from farmers (during 3 months), in the first semester of the project (the sample is 30 farmers)
- 19 improved cultivars have been obtained from Embrapa Brazil;

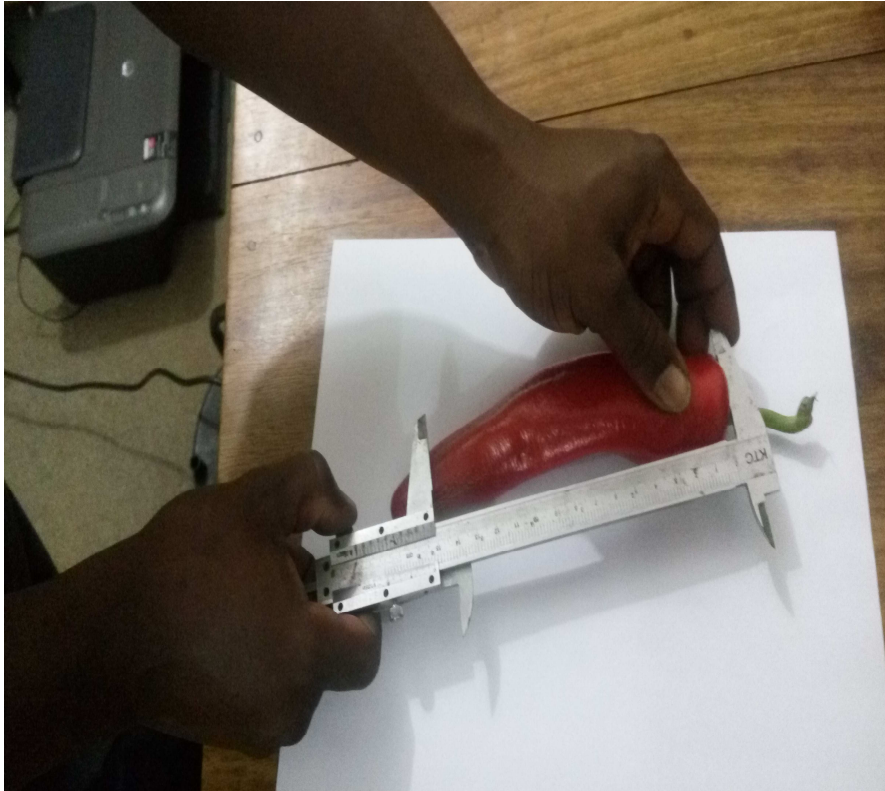


Photo 2: improved local variety

3.1.3. Activity 3: 2 cycles of participatory mass selection breeding in CASADDVR center (first cycle in the second semester and the second cycle in the third semester of the project):

The activity 3 has generated outcomes as:

- A comparative performance trial has been done in 2 cycles: the randomized plots with 2 factors (the variety, the plot (farm),
- Each plot will have 30 plants of each local variety selected;
- analysis have been implemented based on agronomic traits (yield, fruit quality, plant height, plant architecture, and disease incidence);
- Orientation training in on-farm trials, varietal evaluation and market information assessment have been carried out among the farmers



Photo 3: on farm trial visit:

3.1.4. Activity 4: Selection of 2 improved Chile pepper and 2 bell pepper cultivars from Brazil/EMBRAPA:

The activity 4 has generated outcomes as:

- Performance assessment based on characteristics of interest to local farmers have been performed to establish the adoption potentials of the Brazilian improved cultivars by Togo farmers
- 4 farmer's field will be selected for a comparative trial. CASADDVR centres' field as demonstration of the improved cultivars;



Photo 4: Brazilian variety selected



Photo 5: Brazilian variety selected

3.1.5. Activity 5: Farmers groups' discussion to select the best cultivars of Brazil and Togo:
The activity 5 has generated outcomes as:

- Interview guide have been used to elicit information on features that an improved pepper cultivar should have;
- Selection of local varieties and Brazilian cultivars that best meet the needs of farmers;
- Selected varieties promotion through fields' visits local and national workshops.



Photo 6: university station visit

3.1.6. Activity 6: Farmers training for seeds production and replication:

The activity 6 has generated outcomes as:

- 30 farmers have been selected for direct training those farmers will be selected due to their capacity to learn (this training concerns improved seeds production to provide good quality seeds to fellow farmers).
- A total of 2,000 farmers have been involved in knowledge share through village meetings facilitated by the 30 leaders.
- Backstopping had been provided by CASADDVR Team in participatory approaches (innovation development using outside ideas and the communities innovations



Photo 7: Farmers' common nursery



Photo 8: promoted nursery



Photo 9: farmers training

3.2. Overall impacts

The long term objective was to improve small holder pepper farmers' income and local genetic resources conservation. Those objectives are likely to be achieved since the short term objectives that helps to achieve those long terms objectives are met: table 2 summarizes this assessment.

Table 2: objectives assessment

Objective	Comments
1. Select two local varieties of red pepper and two varieties of green pepper (through 2 cycles of mass selection);	<ul style="list-style-type: none"> It has been collected and tested 17 local varieties (16 long fruits and 01 globule fruit) It have be done the first mass selection
2. Select at least two cultivars of chili pepper and two bell pepper cultivars from Brazil;	The selection has been made: instead of 02 we it has been selected 05 chili pepper from Togo and 05 bell pepper cultivars from Brazil
3. Train farmers for seed production and replication;	Farmers training has been achieved jointly by Togo team and Brazil team
4. Improve by 20%, small holder pepper farmers' income.	According to yield improvement this objective is likely to be achieved

3.2.1. Demonstrable impact on production processes, on production/livelihoods, natural resources by the time project funding ceases

Potential development impacts, 5 years after funding ends:

Financial impact:

100,000 pepper farmers have increased their production by 10 %, by using local bred varieties and their revenue from 20% by improving pepper yielding and quality.

Technically impact:

It is estimated that 2500 farmers have the capacity to produce seeds, negotiate prices, and work in a multistakeholders system.



Photo 10: varieties crossing in Brazil (EMBRAPA)



Photo 11: the variety selection system in Brazil (EMBRAPA)

Social impact:

An alternative market for pepper farmers, improving income and seeds control. The value chain will employ 75,000 persons in 5 years.

Environmental and natural resources impact:

The local genetic resource are valorized by developing its using potential. In order to follow the project impact, a participative monitoring and evaluation approach will be used as below: At the beginning of the project all partners in a workshop should define indicators and the methods of data collect. At the end of each year all partners evaluate data collected, and analyze through a workshop.

There are a bank of both local varieties; Brazilian varieties and other new varieties obtained from the crossing that has been conserved. Otherwise, there a system of seed production that is launched a will be continued beyond the funding period

3.2.1. Who will benefit most/least?

The farmers are mostly young men and women.

The farmers are most beneficiaries by first learning about their own practices and their limitations

Secondly by focusing on most productive and resilient varieties

And finally by having a seeds ready to us from their own production

3.3. Sustainability.

3.3.1. The project partners relationship sustainability after the immediate project funding

The partnership either inside Togo or between Togo team and Brazil team has been designed to last and to continue on different challenges that seed value chain is facing

3.3.2. Funding search capabilities

It is possible to mobilize other funds through opportunities and calls

3.3.3. The further thematic focus

Although pepper still our principal focus, it is possible that the consortium makes other proposals out of the pepper value chain as farmers concerns are not limited to this commodity

4. Learned Lessons

4.1. Success factors.

The main factors of the success was:

- Firstly that, each actor involved in the project, apart of the research have its interest in the result of the project: Researchers' expect publications, students expect their graduation, farmers expect best seeds and more production, and private sector expect to build up a business on the new opportunity of seeds production.
- Secondly the visits that had been organized from Togo to Brazil and from Brazil to Togo that enabled the conditions of the each sides and learn a lot from the way things are done.
- The third factor is the communication facilities among teams, the administrative flexibility system of Marketplace and their assistance all along the project process.



Photo 12: Project presentation to public and regional authorities and farmers

4.2. Constraints.

This research project specificity was a multistakeholders participatory aspect, involving different actors at all levels. There was a successful involvement of the farmers. Since, earlier

involvement of farmers in a research was a risk, more assistance, more care and simplest discussion had been necessary to implement activities. University graduate student had brought enough by working from laboratory, station and with farmers to achieve results.

At farmers' level, the first challenge was protocol following a rigorous selection. To overcome this constraint, the work had to be done jointly by student, technicians and farmers.

For technology adoption, this experience proves that farmers are always ready to learn.

Brazil team assistance have been important in technical assistance aspect according to their experience in selection. Their iterative assistance helped Togo team, to improve technology and the way research have been run.

4.3. Brokerage and facilitation.

The Africa-Brazil MARKETPlace system has allowed two co-leaders one for Africa side and the other for Brazil side.

Indeed, NGO CASADDVR had mobilized all Togo's side partners. As for Brazil EMBRAPA played that role. The brokerage role of FARA and MARKETPlace had engaged important steps by bringing Africa institution and Brazilian team together to ease communication and collaboration from the design to the implementation of the project.

MARKETPlace team and FARA has played then an important role by monitoring and evaluating the project process.

4.4. Capacities.

As teams are complementary, the weakness in one side have been filled by the capacities of other side. The teams had shared all research documents and correct them together: survey sheets, agro morphological descriptors, data record sheets and how to organize data. The capacity of the farmers had been iteratively strengthen at the beginning of each activity to enable them to be fully involved.

4.5. Project management.

A priori, there were be a communication challenge as the work was to done by two teams of Brazil and Togo, and by many actors. Internet has eased the work.

This work has been done as one team through emails; by using trello software the teams had worked jointly on experimentation document data record documents and survey documents.

Communication became faster more convenient and interactive by what's app after the first visit in Togo by Brazil team. This visit enabled both teams to interact, gain confidence and work closer than before: this confidence has improved the relationship to gain best results.

4.6. Policy environment.

Before the beginning of activities, there was an information workshop with different actors involved in the project. This had an effect to ease activities and improve the understanding of all partners and their role in the project.



Photo 13: The official ceremony of launching the project by regional director of agriculture, livestock and aquaculture of central region of Togo

5. Conclusion

By a participative research approach, the following activities had been implemented:

- Pepper production assessment in the 05 regions of Togo had been done.
- 05 local varieties of red pepper have been selected and bred. 05 Brazilian varieties had been selected by farmers as adapted to their conditions and needs
- 18 cultivars from Embrapa (Brazil) and 19 local varieties had been evaluated;
- Train 30 farmers' leaders for seed production and replication

This experience proves that farmers are always ready to learn. Brazil team assistance have been important in technical assistance aspect according to their experience in selection. Their iterative assistance helped Togo team, to improve technology and the way research have been run.

The main point to remember is the user led approach through multistakeholders research for development that connects African team to a developed country team, had at once many impacts before the end of the project: as each actors participate actively for the simple reason that its interest is directly linked to the results and the other side, people learn directly during the process and can influence directly results according to their expectation.

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