



Training workshop report on good agricultural practices for the production and conservation of seed potato in the West, Adamawa, and Northwest regions

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Dschang, 26 April 2021



Ngaoundéré, 5 May 2021



Dschang, 9 August 2021

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Acronyms and Abbreviations

APROSPEN	Action pour la Promotion de la Santé, la Production et l'Environnement
CIP	International Potato Center
DLS	Diffused Light Store
DRCQ	Directorate of Regulation and Quality Control of Agricultural Inputs and Products
GAPS	Good Agricultural Practices
IRAD	Institute of Agricultural Research for Development
MINADER	Ministry of Agriculture and Rural Development
NPK	Nitrogen Phosphorus Potassium
PPE	Personal Protective Equipment
ProCISA	Green Innovation Centers for the Food and Agriculture Sector

Executive summary

The International Potato Center (CIP), in collaboration with the Green Innovation Centers for the Food and Agriculture sector (ProCISA), the Ministry of Agriculture and Rural Development (MINADER), and the Institute of Agricultural Research for Development (IRAD), organized and facilitated training workshops for seed growers on Good Agricultural Practices (GAPs) for the production and conservation of seed potato. The workshops that took place in ADYS hotel in Dschang on 26 – 27 April 2021, TRANSCAM hotel in Ngaoundere on 5 – 7 May 2021, ADYS Hotel in Dschang on 9 -11 August 2021, brought together active and potential seed growers from the West, Adamawa, and Northwest regions, respectively. Seed growers from Lebialem division (South-West region) were also invited to join the Northwest cohort. The aim of the workshops was to share the knowledge with participants on Good Agricultural Practices for the production and conservation of seed potato.

The workshops were moderated by the regional MINADER – ProCISA Focal Points and facilitated by CIP and IRAD researchers, as well as representatives of the Directorate of Regulation and Quality Control of Agricultural Inputs and Products (DRCQ). In the Adamawa, a translator was brought on board to translate all the presentations and questions and answers into the local language Fulfulde, given that participants could neither express themselves in the French language nor understand it.

This was an opportunity for participants in the three regions to (i) identify the constraints they face in seed production and conservation, (ii) know about the standard seed and variety schemes, (iii) learn GAPs for the production and conservation of seed potato, (iv) and identify their individual needs and define individual action plans to improve their agribusiness in seed potato. The theoretical sessions were conducted in a participatory manner combining PowerPoint presentations, questions, and answers as well as discussions and sharing of personal experiences. Field demonstrations were equally carried out during which participants were drilled on the identification of pests and diseases, positive and negative selection, dehaulming, phytosanitary treatment, and the proper handling of phytosanitary products, amongst others.

Participants in the workshops were either active seed potato growers or those aspiring to venture into seed potato production. In the West region, fifteen (15) participants attended, of whom only one (01) was a woman. In the Adamawa region, eighteen (18) participants took part, of whom six (06) were women. For the Northwest region and Lebialem division, twenty-four (24) participants attended the training, of whom six (06) were women. At the end of the workshops, trainees were satisfied with the knowledge acquired and expressed the need to be accompanied for bettering the quality and quantity of their seed in their respective regions and divisions.

1. Introduction

In its special initiative, "One world without hunger," the German Cooperation BMZ intends to contribute significantly to the reduction of poverty and hunger in developing countries. In Cameroon, this project is part of the overall project - "Green Innovation Centres for the Agriculture and Food Sector" (ProCISA), which contracted the International Potato Center (CIP) to support the potato sector through a project titled Potato Value Chain Development (PCVD) in Cameroon.

In its third component, the PCVD project will contribute to the establishment of a sustainable national seed system to improve farmers' and cooperatives' access to quality seed of disease-resistant and market-demanded varieties for increased productivity and resilience. This will be done by establishing and strengthening the national seed system integrating local seed potato multiplication (the entire multiplication chain from in-vitro seed production to certified seed) and new varieties that are multiplied locally.

The project will identify and work with private and public tissue culture laboratories and nurseries, to technically backstop and introduce early generation multiplication technologies such as apical rooted cuttings (ARCs). CIP will provide training to the in-vitro laboratory and greenhouse technicians in seed production and offer manuals for rapid multiplication technologies.

For further field multiplication and job creation, the project will identify seed multipliers (SMs) who have at least three to four hectares of suitable land (or who can rent land for rotation purposes) in partnership with the Ministry of Agriculture and Rural Development (MINADER). The identification of suitable seed multiplication sites is critical for sustainable seed production because seed potato is highly vulnerable to quality degradation when multiplied in inappropriate sites.

Thus, there was a need to invite at least 50 seed multipliers selected from the project areas (Adamawa, Northwest and West regions) for training in seed multiplication techniques through a series of two to three-day workshops in each region and regular technical support. The workshops comprised a theoretical part during which there will be PowerPoint presentations and discussions, and a practical session during which the participants would visit a potato field to have a hands-on experience on some of the topics discussed during the theoretical sessions.

Overall objective: Train seed growers of the West, Adamawa, and Northwest regions and the Lebialem division on GAPs for the field multiplication and conservation of seed potato.

Specific objectives

- i. Identify participants' knowledge gaps in seed potato production and storage as well as the main constraints they encounter ;
- ii. Present the standard variety and seed schemes adapted to the local context ;
- iii. Improve participants' knowledge on GAP for seed potato production, protection, and storage; and
- iv. Identify individual needs and define individual action plans.

2. Training methodology

2.1 Materials and translation

The methodology adopted was essentially participatory, combining PowerPoint presentations and brainstorming in plenary sessions and during field demonstrations. Facilitators used PowerPoint presentations to present the different topics, and this led to discussions, questions and answers, and validation of the key messages of each presentation. In the Adamawa, a translator was also brought on board to translate from French to Fulfulde and vice versa, given that most of the participants could not express themselves in the French language. Pidgin English was the main language used during the training of seed potato growers of the Northwest region and Lebialem division. COVID-19 protection kits and writing material were distributed to participants at the beginning of each workshop.

2.2 Workshop schedules

These workshops ran for two days for seed growers of the West region and for three days each for those of the Adamawa and Northwest region and Lebialem division (see workshop programs in Annexes 1, 2, and 3).

The programs for the first days were scheduled as follows:

- Arrival and registration of participants ;
- A brief presentation of CIP by the regional Coordinators ;
- Official opening speeches by Mr. Paul Metenou, MINADER Regional Delegate for the West region, Mr. Haman Dawai Raymond, MINADER Regional Delegate for the Adamawa, and Mr. Thomas Fuchi Song, MINADER Regional Delegate for the Northwest. In their opening remarks, they warmly welcomed the participants and reminded them of the objectives of the workshop. They exhorted the participants to give their best for the success of the workshops by giving valuable contributions that would lead to the improvement of the potato seed sector (Figure 1). Each of them equally thanked ProCISA for the new technologies implemented through CIP to improve that sector in Cameroon.
- In his word of welcome at the Ngaoundere workshop, the ProCISA-Adamawa Technical Adviser, Mr. Francis Kouyem, welcomed the participants and highlighted the activities of ProCISA in the region.
- In the West region, during the training of seed growers of the Northwest and Lebialem, the ProCISA Regional Technical Adviser, Mr. Idriss Nyebe, welcomed the participants and gave a brief presentation of ProCISA and the role of its implementing partner, i.e., CIP, in the potato value chain project in Cameroon.
- Self-introduction of participants; in the Adamawa, this was done in the local dialect, Fulfulde, to allow them to express themselves freely. During this exercise, the participants equally stated their experience in potato seed production ;
- The moderators outlined the rules of conduct while recalling the context and objectives of the workshops before presenting the workshop programs for validation by the participants ;
- Expression of participants' expectations in terms of knowledge on seed potato production and conservation (Figure 2); and,
- Family photos were taken to close the opening ceremonies.

- On the second day in the West region, the presentations continued, and they were followed by a field visit in the Adamawa region and Dschang (for seed growers from the Northwest and Lebiallem) day two activities continued with presentations, and field visits were conducted on day three.



Figure 1. Opening of the workshops by the MINADER Regional Delegates, West Regional Delegate on 26 April 2021 in Dschang (A), Adamawa Regional Delegate on 5 May 2021 in Ngaoundéré (B), Northwest Regional Delegate on 9 August 2021 in Dschang (C).

3. Attendance and expectations

3.1 Attendance

Those invited to the workshops included:

- Institutional partners (MINADER and IRAD);
- The partner training center for the Adamawa (APROSPEN);
- Seed growers; and
- Leaders of farmers' cooperatives and Common Initiative Groups.

The three workshops were attended by fifty-seven (57) participants and animated by eleven facilitators. For the West region, fifteen (15) participants attended, of whom only one (01) woman (Annex 3). For the Adamawa, thirty (24) participants attended, of whom six (06) were women (Annex 4). For the Northwest region and Lebiallem division, twenty-four (24) participants attended, of whom six (06) were women. In Ngaoundere, apart from the invited participants, we had a potato farmer who attended the workshop after seeing the banner in town.

During self-introductions, in addition to their name and structure, each participant had to indicate his or her experience in potato farming, as shown in Table 1. It should be noted that some participants arrived after introductions reason why the total number provided in the table does not match the total attendance.

Table 1. Participants' experience in seed potato production in the three regions

Years of experience	Number of participants		
	West	Adamawa	Northwest and Lebalelem
New	7	7	7
1 to 2	2	-	-
>5	4	9	18
Total	13	16	25

3.2 Participants' expectations in terms of knowledge on seed potato production and conservation

Before the presentation of the training modules, the seed growers expressed what they expected to learn during the training that would improve their knowledge on potato seed production and conservation. These are shown in Figure 2 below.

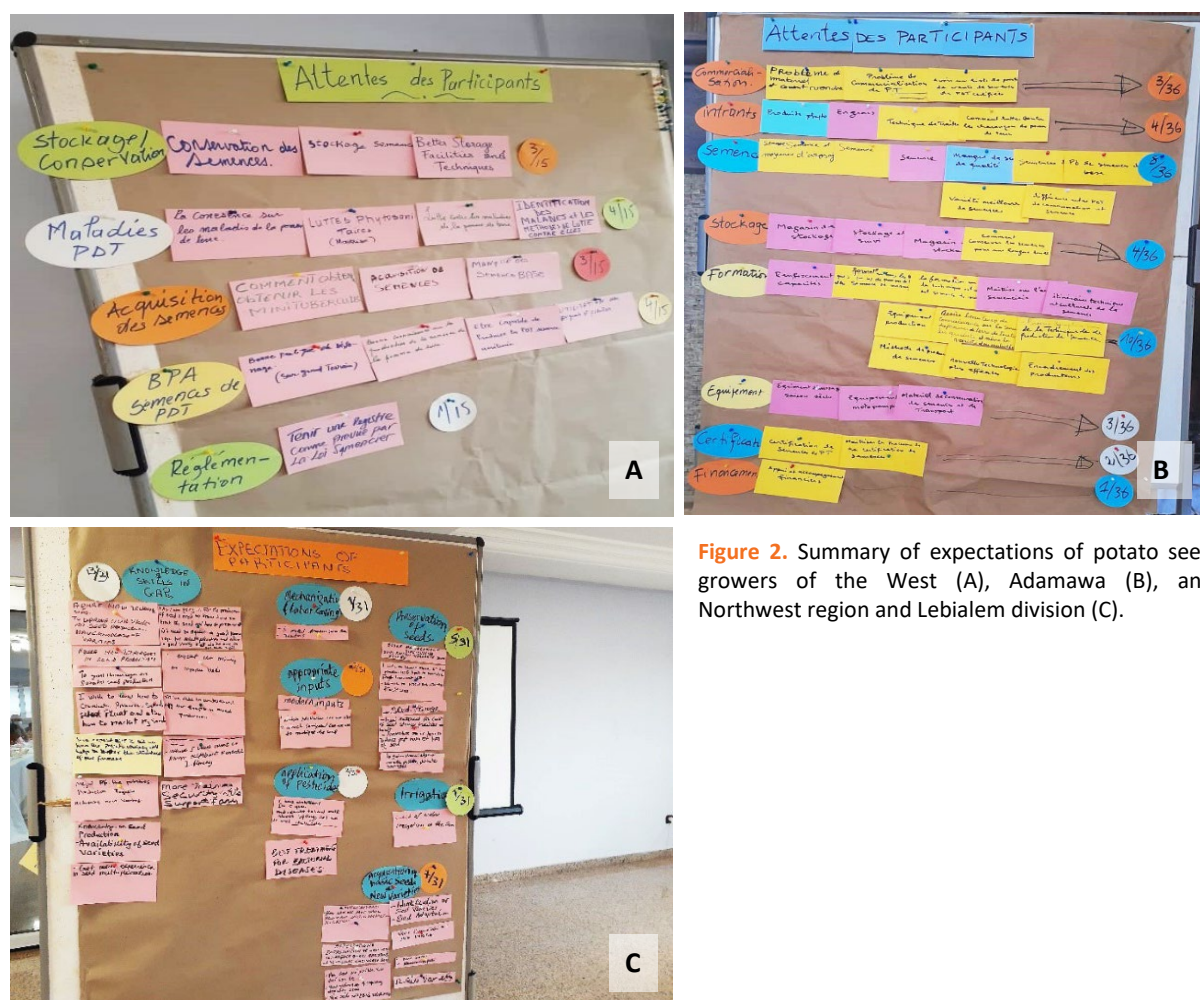


Figure 2. Summary of expectations of potato seed growers of the West (A), Adamawa (B), and Northwest region and Lebalelem division (C).

The expectations of participants were prioritized and captured in Table 2 (West), Table 3 (Adamawa), and Table 4 (Northwest region and Lebialem division).

Table 2. Expectations of seed growers of the West region from the training workshop

No	Need	Number of participants concerned
1	Knowledge in GAPs	11
2	Access to quality seed	3
3	Better understanding of seed regulations	1
	Total	15

Table 3. Expectations of seed growers of the Adamawa region from the training workshop

No	Need	Number of participants concerned
1	Knowledge on GAPs	10
2	Access to seeds	8
3	Inputs for seed production	4
4	Conservation of seeds	4
5	Commercialization of seeds	3
6	Equipment for seed production	3
7	Certification procedures	2
8	Access to finances	1
	Total	35

Table 4. Expectations of seed growers of the Northwest region and Lebialem Division from the training workshop

No	Need	Number of participants concerned
1	Knowledge and skills in GAPs	13
2	Access to basic seeds and new varieties	7
3	Conservation of seeds	5
4	Application of pesticides	2
5	Proper use of recommended outputs	2
6	Mechanization	1
7	Irrigation	1
	Total	31

4. Presentations and discussions

The plenary sessions consisted of PowerPoint presentations followed by questions and answers with contributions from the participants through discussions .

4.1 Variety scheme and development of new varieties

The facilitator (Figure 3) introduced the variety scheme to seed growers, which consists of developing a new potato variety. The presentation centered on:

- The classical and long CIP variety scheme that spans ten to twelve years to develop a new variety ;
- The new CIP variety scheme now takes just five years to develop a new variety ;
- Coding of CIP clones; and
- The new variety release procedure in Cameroon.

After this presentation, participants asked some questions to get a better understanding of the variety development process.

They enquired whether CIP is using protoplast fusion to develop new varieties and if meristem culture is also used to develop new varieties. The answer to the two worries was no. However, the facilitator explained that meristem culture is a method used in the laboratory to produce disease-free plants without modifying the plants. The participants acknowledged having understood the complexity of developing a new variety but pleaded on CIP to bring in new varieties that could satisfy the national demand. They were equally advised to practice GAPs to maintain what they have now as seed.



Figure 3. Presentation of the variety scheme in Dschang on 9 August 2021.

4.2 Seed scheme and seed systems

The facilitator, Victorine Fornkwa, presented the different steps through which different categories of seeds are produced, from breeding to field multiplication. The presentation was centered on the following aspects:

- Micropropagation in the laboratory: examples of laboratories in Cameroon.
- Production in screenhouses using some examples of private greenhouses in Africa (Ethiopia, Kenya, Tanzania and Cameroon);
- Field multiplication; and
- Examples of minitubers production in other African countries. It should be noted that Kenya is one of the leading countries in Africa in minitubers production. In Cameroon, the sector is still underdeveloped, and for now, there is only one private company named Structure Towa producing potato minitubers. In the West region, samples of minitubers were presented, and this attracted a lot of interest from participants.

This presentation drew the attention of the participants to the fact that they could build their own screenhouses with technical support from CIP. But they wanted to know where they would get the in vitro plantlets to multiply in the screenhouses. The facilitator told them that the IRAD Bambui and Structure Towa laboratories are the only structures producing pre-basic seed potato for now, and CIP is supporting them with material and equipment to boost their production. They were also informed that they could acquire minitubers from Structure Towa, though they might be costly. The seed growers, however, pleaded that the MINADER extension agents should fill the gap between research and vulgarisation.

4.3 Introduction to seed potato

This presentation was done in all the workshops by IRAD researchers (Figure 4). At the beginning of the presentations, they sought to know from the participants the source of the seeds they use. They get them from diverse sources like MINADER, IRAD, imported from Europe and from the market. The presenters then elaborated on the following points:

- An overview of seed production;
- Characteristics of seed tubers;
- The potato varieties multiplied in Cameroon; and
- Seed degeneration.

The presenters outlined the constraints in seed production: the lack of quality seed and the lack of knowledge in GAPs for seed production. They equally emphasized that seed production is a specialized activity, and seed growers must respect the regulations spelled out by the DRCQ. The participants, on their part, agreed that crop rotation is essential to limit seed degeneration and expressed the need for short-cycle varieties which could be grown in the highlands where the production areas are situated. Participants also sought to know the proper method to eliminate apical sprouts and if seeds with dominant apical sprouts could give other sprouts when planted. The facilitator responded by telling them that the apical sprout is removed by gently turning it and not by pulling it off. After understanding the disadvantage of having seeds with single apical sprouts, some participants said they would rather pay many laborers to do the work carefully if they have many tubers with dominant apical sprouts. They were also told that seeds with apical dominance, if planted, could develop other sprouts, but this cannot be guaranteed.



Figure 4. Introduction to seed potato presented by IRAD researchers: Etienne Djatsa in Dschang on 26 April 2021 (A), and aLovelyn Ngwa in Dschang on 9 August 2021 (B).

4.4 Land selection, preparation, and planting

In the three workshops, the presenter, Ibrahim Adamu Kelly elaborated on the following points:

- The importance of implementing a “Flush out” system in seed production. That is why they should never plant very high-quality seed on land where they had planted low-quality seed. Thus, each category of seed should be planted at an altitude corresponding to its quality;
- The importance of carrying out a soil test before planting to know the nutritional status of the soil and know which amendments and fertilizers to apply;
- The practice of crop rotation in seed production to maintain clean fields;
- Spacing for planting depending on the size of the seeds;
- The types and quantities of manure and fertilizers to apply in seed potato production; and
- The importance of weeding and hilling up and how this affects yield.

During the discussions, it was advised to seed multipliers to form cooperatives to facilitate the possibility of soil analysis at a low cost, given that the cost of analysis is high. There is thus a need for cooperative members to build their capacity in soil analysis and purchase mini kits for rapid soil analysis. Moreover, the rotation must be done with other crops to eliminate the opportunistic potato plants.

The questions raised and answers provided are summarized below:

Question: What is the difference between atmospheric nitrogen and nitrogen in fertilizers, and why amend the soil again given that there is atmospheric nitrogen?

Answer: Not all plants have the capacity to fix atmospheric nitrogen. Therefore, it is necessary to amend the soil with the nitrogen in fertilizers.

The question spurred an interesting debate in the Dschang workshop.

Question: What is the difference between plowing depth and planting depth?

Answer: The plowing is done at 30 cm, but the tuber is sown at a depth of 10 - 15 cm after the application of manure and fertilizer.

Question: Why apply a nitrogen fertilizer when there is already N in the NPK fertilizer like Yara Mila complex?

Answer: The N contained in the mixed fertilizer used is not enough compared to the plant’s needs.

Participants of the Adamawa were more concerned about applying fertilizers, especially the second dose during hilling up and the importance of hilling up twice. This concern was clarified by the presenter with contributions from some participants and facilitators. It was explained that to apply the second dose a hole is dug at about 10 cm from the plant, and the fertilizer placed in the hole and covered with soil. It was also explained that the second hilling up is necessary to replace run-off soil, especially during periods of heavy rainfall.

After this presentation, some Adamawa participants acknowledged having understood why they observe some tiny stems in their farms; this is due to bad hilling up.

A participant of the Northwest region shared her experience in using cow dung as manure due to the scarcity of poultry manure during the crisis period. She treats it with Mocap (a granular nematicide-insecticide) and keeps in a locked area for two months, after which she opens and allows it to decompose for six months before using. Participants of the Northwest also complained about the scarcity of recommended fertilizers in the region which has left them with the only available option with an NPK formulation of **10:10:30**.

4.5 Disease and pest management

The presentations on pests and diseases were followed with rapt attention by participants in all the workshops. The facilitators (Figure 5) presented the disease triangle, which is the basis for control measures to eradicate or reduce the effects of pests and diseases. Thus, during the presentations, the participants understood the intrigues involved in identifying and managing these diseases and others. The presenters elaborated on the symptoms, detection, transmission, and management of the following diseases that prevail in the potato production areas:

- Late blight, the most devastating fungal disease, can be controlled using fungicides available in the local market like Mancozeb (contact) and Ridomil (systemic).
- Bacterial wilt is less devastating but difficult to deal with as it cannot be controlled using chemicals. It can, however, be controlled using an integrated approach, including the use of the clean seed, rotation with crops like maize and beans, proper field maintenance, roguing, etc.
- Soft rot or black leg which is managed in the same way as bacterial wilt.

They equally expounded on the identification and control of viruses and other diseases like black scurf, which causes black spots on tuber skin, common scab which causes scabby lesions on tubers, as well as pests like potato cutworms, potato tuber moth, and nematodes which cause stunting and yellowing in plants.

During the workshops, participants shared experiences on the control methods they use against late blight (the most devastating fungal disease affecting their production) and nematodes. One participant in Ngaoundéré said she eradicates nematodes by planting onions and garlic together with potatoes, and one in the West region treats nematodes by spraying an infusion of *Tagetes spatula*. Another participant in the Adamawa said he applies granular insecticides; he was advised to use the liquid formulation to eradicate pests and their larvae.

As concerns the treatment of late blight, after a series of exchanges, participants agreed that the frequency of treatment depends on the atmospheric conditions and the specifications of the products.

It was observed that some participants (especially those of the Adamawa) lacked basic knowledge of the products they use, a reason why some did not have expected results after treatment or observed a non-homogenous mixture of fungicides and insecticides.

During the workshop with seed growers of the West region, some participants made suggestions for corrections to be made in the seed producer manual, for example, to remove the commercial names of the pesticides in the manual because it is not always the same products found in the local market.

Participants of the Northwest and Lebaleme on their part, agreed that the spraying calendar should be followed strictly to control diseases. They, however, did not agree to the contribution of a participant about applying a mixture of contact and systemic fungicides to treat late blight at three-week intervals. Another participant shared his experience about a phenomenon observed in swampy areas early in the morning; this was attributed to “frost” due to low temperatures and could be handled by simply irrigating the plants.



Figure 5. Presentations on disease and pest management by Eric Tiozang in Dschang on 26 April 2021 (A) and Richard Anango in Dschang on 09 August 2021 (B)

4.6 Negative and positive selection techniques

The presenters (Figure 6) elucidated the difference between the two techniques. Negative selection otherwise referred to as roguing, is practiced in seed farms to ensure the production of quality seeds. The practice consists of regularly inspecting the potato field, identifying and eliminating any abnormal plants, including tubers and roots.

Meanwhile, positive selection is practiced in a ware potato farm to reserve seeds for the next season.

It was understood from this presentation that seed growers need to know the negative selection technique and practice it to optimize their production. The participants highly appreciated the new knowledge acquired concerning the two techniques.



Figure 6. Presentation on negative and positive selection techniques by Albert Apan in Ngaoundere on 6 May 2021 (A), and Eric Tiozang in Dschang on 10 August 2021 (B).

4.7 Dehaulming

4.7.1 The presentation

Dehaulming is the practice of removing or destroying potato stems ahead of the complete maturity of the plant. It is another essential agricultural practice in seed production as it stops tuber growth. The objective is, to have the largest yield of small to medium-sized seed tubers even though total tuber yield reduces. Dehaulming is generally done two weeks before harvesting; this is to allow the tuber skin to harden.

From this presentation (Figure 7), the participants understood that dehaulming is practiced in seed farms and not in ware potato farms. The methods of dehaulming were equally examined, which include the use of feet and chemicals. The use of knives or cutlasses was greatly discouraged because it would transmit diseases to seed tubers. This advice sparked a debate in which some participants of the Adamawa argued that a farm could be dehaulmed using a knife and then sprayed with pesticides to prevent disease. Such a practice was discouraged by the facilitators and some participants.

4.7.2. Questions-and-answer session

Question: Can systemic herbicides be used to dehaulm?

Answer: Use only contact herbicides like Reglone.

Question: If, after dehaulming, tubers remain in the soil for more than two weeks and there is abundant rainfall, what could be the consequences?

Answer: Tubers could rot if the farm is not well-drained.

Question: Is it necessary to dehaulm in the dry season given that the shoots can dry off?

Answer: If the shoots are still green at the required time, the plants must be dehaulmed.

4.7.3. Remarks from seed growers of the West region

- The period to dehaulm is not eighty days after planting for all varieties. It depends on the cycle of each variety; and
- Tuber size at dehauling should vary between 25 - 55 mm and not 25 – 28 mm.

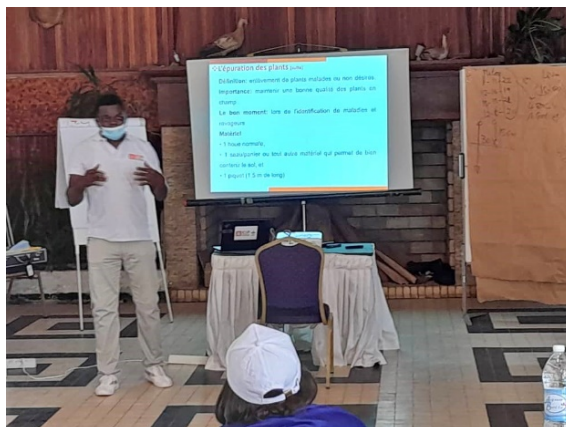


Figure 7. Presentation on dehauling by Albert Apan on 6 May in Ngaoundere.

4.8 Harvesting, sorting, and grading

In all the workshops, the facilitators (Figure 8) highlighted the following points:

- Harvesting could be done manually or mechanically depending on the size of the field ;
- Tubers should be sorted after harvest; and
- Tubers should be graded into various sizes before storage.

Participants retained from the presentations that a maturity test should be done before harvesting, and tubers from diseased plants should be reserved for consumption and never for seed. Also, after harvest, all the debris should be gathered out of the farm and destroyed to sanitize the farm.



Figure 8. Presentation on harvesting, sorting and grading by Honoré Mafouo in Dschang on 27 April (A) and Adamawa by Eric Tiozang in Ngaoundéré on 6 May 2021 (B).

4.9 Conservation of seed potato

The facilitators presented some examples of diffused light stores (DLS) both in Cameroon and other African countries (Figure 9). Emphasis was laid on the importance of storing seeds in appropriate conditions, that is, diffused light stores. Participants were reminded of the fact that bad storage conditions could lead to great seed losses. Most participants attested not having DLS. They store on the floor in wooden crates or spread on mats, and most often in one room of their house. They were happy to know that they could build their own DLS from locally available materials like bamboo, plank, etc., at a relatively cheap cost. They were also informed that CIP would build two DLS in the Adamawa region, which would serve as models for them to build theirs.



Figure 9. Presentation on the conservation of seed potato in Dschang by Etienne Djatsa on 27 April 2021 (A) and in Ngaoundere by Victorine Fornkwa on 6 May 2021 (B).

4.10 The procedure of seed certification

This presentation was done in all the workshops by the staff of the DRCQ (Figure 10). They elucidated on the different procedures to follow for the certification process summarised into three major steps as follows:

- Inspection of documents;
- Inspection of plants in the field as well as seeds in conservation; and
- Inspection of plantlets in the laboratory.

The participants followed this presentation with keen attention, given that many of them were not in conformity with the laws. The facilitators explained in detail the different steps to follow and the legal consequences involved when the rules are not respected.

Participants in all workshops resolved to follow the procedure but called on the DRCQ to reduce the costs involved at the different stages.

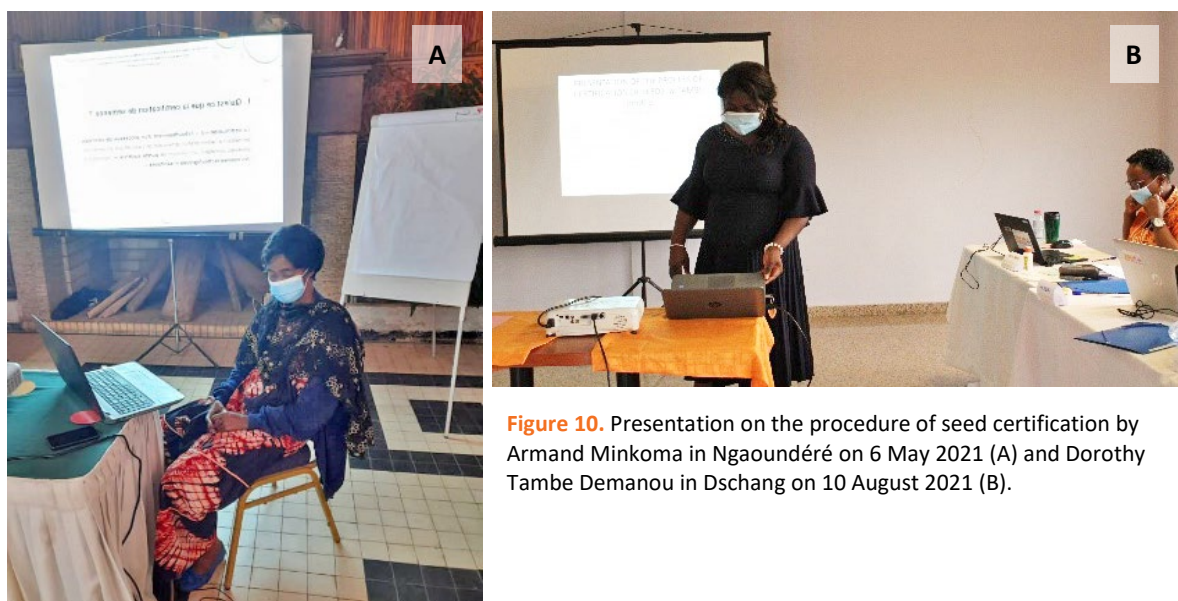


Figure 10. Presentation on the procedure of seed certification by Armand Minkoma in Ngaoundéré on 6 May 2021 (A) and Dorothy Tambe Demanou in Dschang on 10 August 2021 (B).

5. Expression of individual needs

At the end of each workshop, participants put together their individual needs to improve seed production in quality and quantity. These are captured in Figures 11, 12, and 13 for the West, Adamawa, and Northwest regions, respectively.

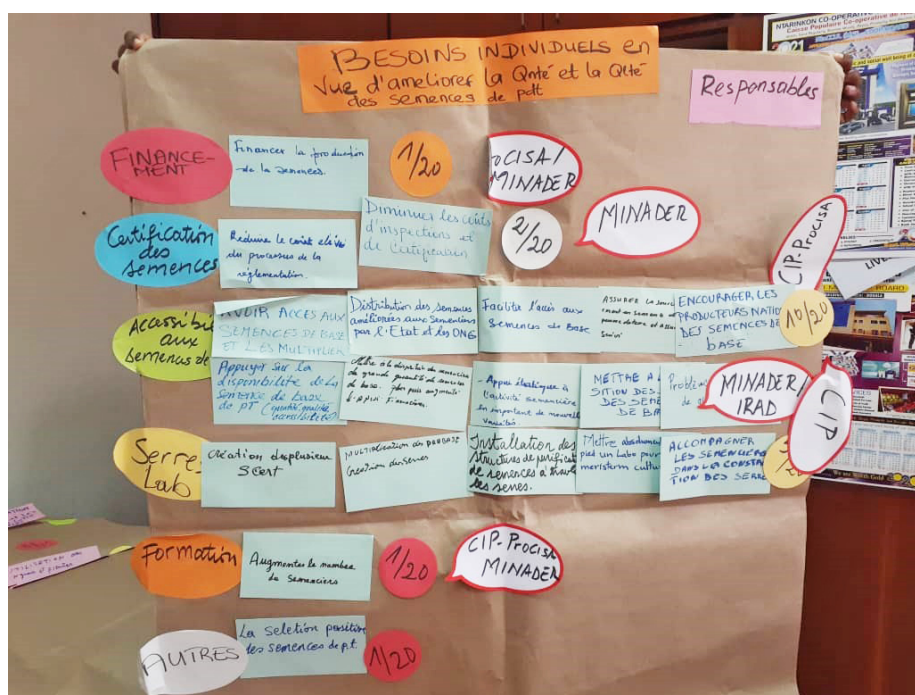


Figure 11. Individual needs of the seed growers of the West region.

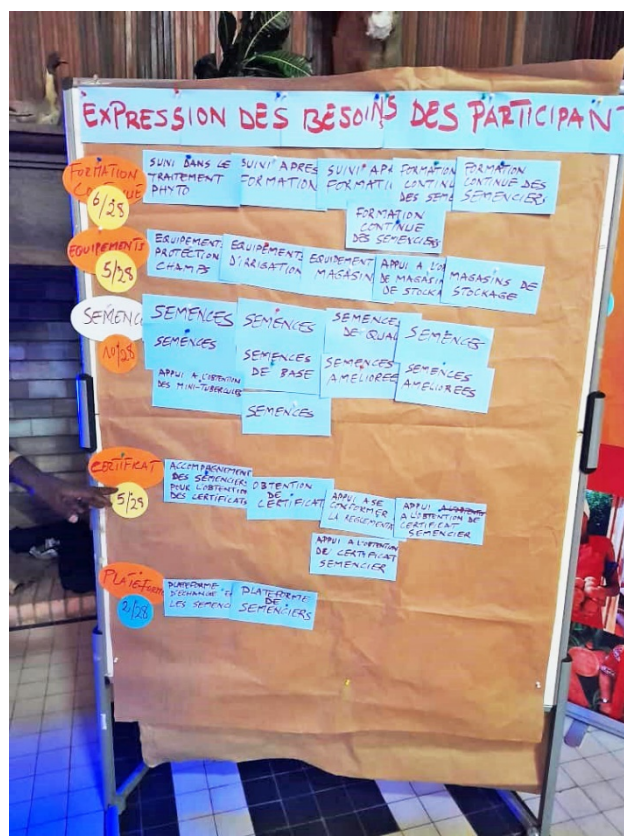


Figure 12. Individual needs of seed growers of the Adamawa region



Figure 13. Individual needs of seed growers of the Northwest region and Lebalem division.

The individual needs were summarised and classified in order of priority, as shown in the tables below.

Table 5. Classification of individual needs of seed growers of the three regions in order of priority

Rank	Ranking of needs per region		
	West	Adamawa	Northwest and Lebialem
1	Access to quality seed	Access to quality seed	Access to quality seed
2	The need for screenhouses and laboratories for multiplication of pre-basic seeds	Continuous training and follow-up of seed growers	Training and follow-up of seed growers
3	Review of the cost of certification by MINADER	Need of equipment and infrastructure like irrigation and storage facilities	Need for mechanization equipment and access to homologated inputs
4	Funding for seed production	Review of the cost of certification by MINADER	Appropriate storage facilities and access to finances
5	Continuous training and follow-up of seed growers	Creation of a platform of seed growers of the region	Irrigation facilities and review of the certification procedure
6	Knowledge of positive and negative selection techniques		Processing

6. Field demonstrations

The three workshops wrapped up with field visits at Djuttitsa in the West region for seed growers from the West region, Northwest and Lebialem, and Rep-Yanga for seed growers from the Adamawa (Figures 14, 15, and 16). The objective was to have a practical demonstration of some technical aspects discussed during the plenary sessions. The aspects emphasized were:

- Identification of diseases (late blight, bacterial wilt, and viruses) ;
- Demonstration on:
 - Hilling up;
 - Dehauling;
 - Positive and negative selection techniques;
 - Phytosanitary treatment; and
 - Measurement of ground cover.



Figure 14. Field demonstration in Djuttitsa with seed growers of the West region on 27 April 2021.



Figure 15. Field demonstration in Rep-Yanga with seed growers of the Adamawa region on 7 May 2021.



Figure 16. Field demonstration in Djuttitsa with seed growers of the Northwest region and Lebialem division on 11 August 2021.

During all the workshops, there was a practical demonstration of the identification of bacterial wilt using the water glass method (Figure 17).



Figure 17. Demonstration on diagnosing bacterial wilt in a potato plant.

During all the training workshops, facilitators equally demonstrated the spraying techniques using a knapsack sprayer and the appropriate PPE to wear during the process (Figure 18).

The take-home message was that pesticide applications should be made early in the morning following the direction of the wind. These chemicals should be applied following the prescribed doses, and the farmer should put on appropriate protective equipment during treatment.



Figure 18. Demonstration on proper mixing of fungicides, spraying, and the appropriate PPE outfit for spraying.

7. Evaluation of the workshops

At the end of the workshops that took place in the West, Adamawa, and Northwest regions, the facilitators distributed to participants evaluation sheets to express their appreciation of the workshops both in the technical and logistics aspects.

The majority (about 75%) of the participants in all the three regions totally agreed with the quality of the technical aspects presented during the workshop (Figure 19). Half of the participants in the three regions agreed with the quality of the logistics though some improvement needs to be done at the level of the quantity of food, respect of lunchtime, and the transportation fare as expressed by some of them (Figure 20).

Generally, the workshops were a success because the participants' expectations expressed at the beginning were met.

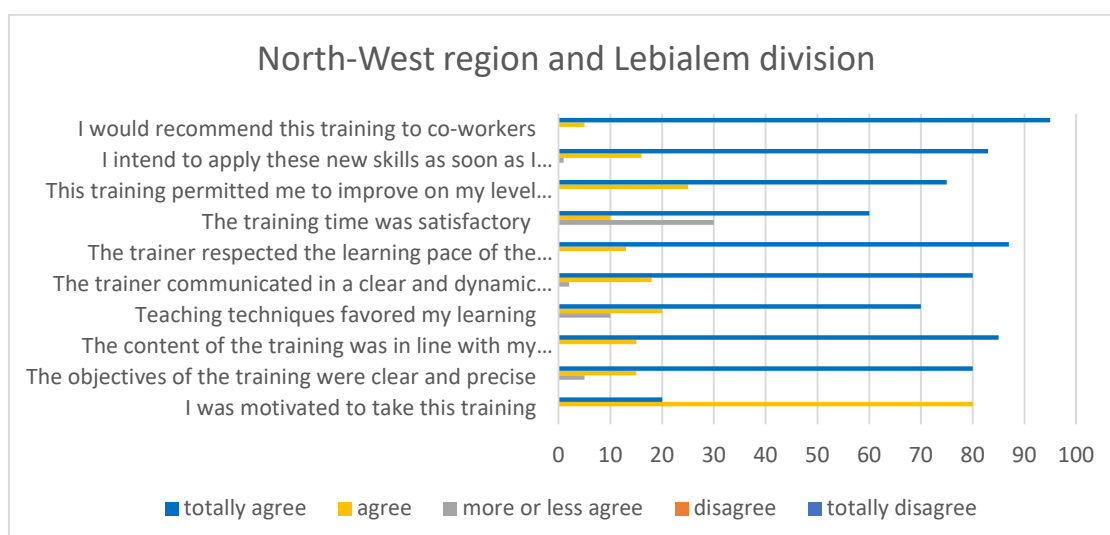
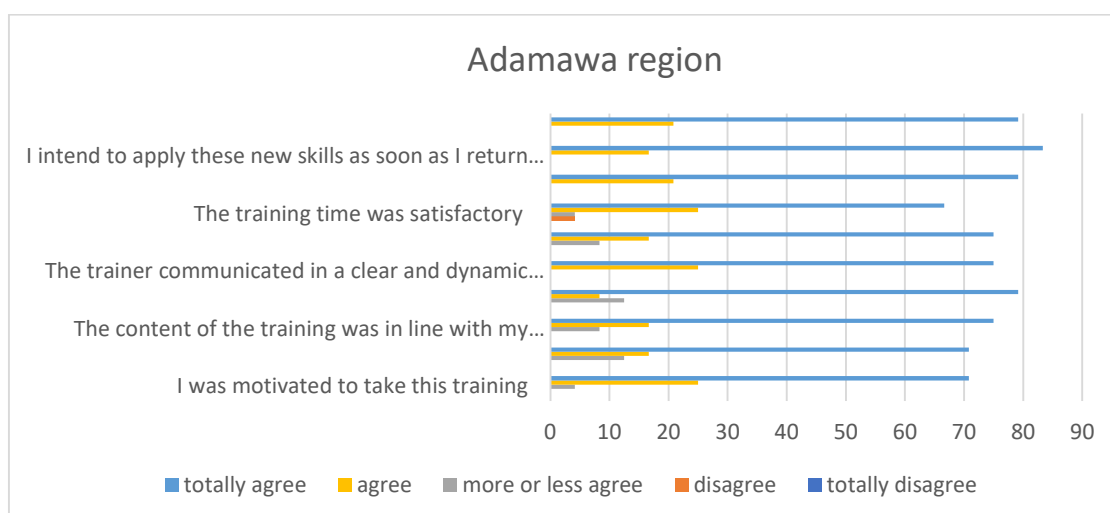


Figure 19. Participatory evaluation of the technical aspects of the training workshops.

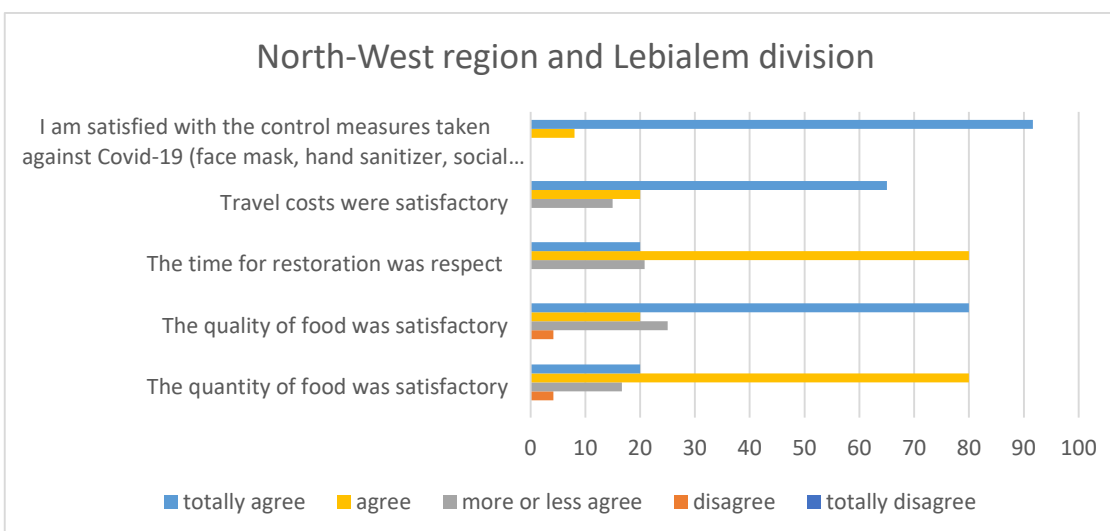
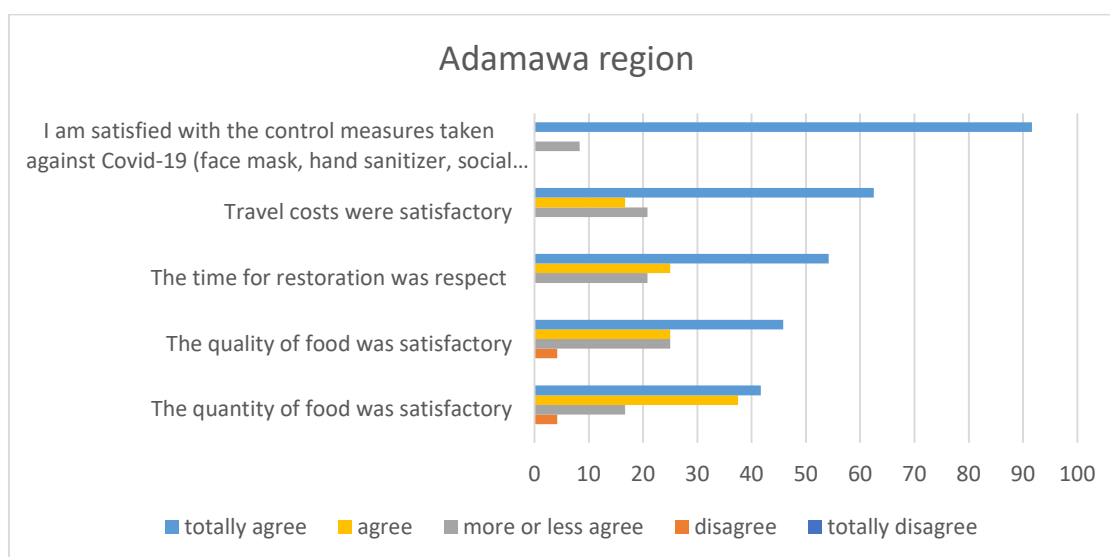
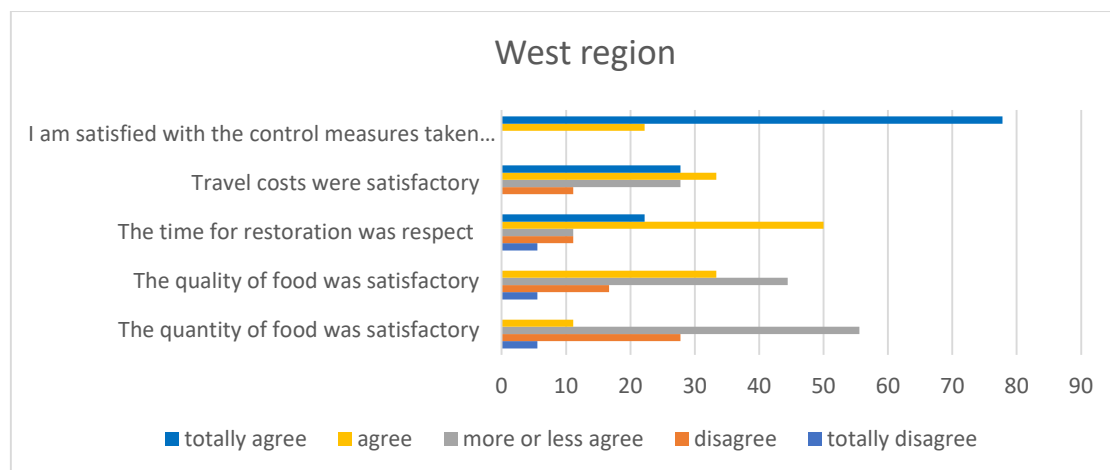


Figure 20. Participatory evaluation of the workshop logistics in the three regions.

8. Conclusion and recommendations

The three training workshops on GAPs for the production and conservation of seed potato that were organized in Dschang and Ngaoundéré brought together seed potato growers of the West, Adamawa, and Northwest regions and seed growers from the Lebialem division. According to the participants, their expectations expressed at the beginning of the workshops were met. At the end of the workshops, they expressed what they needed to do to improve the production of quality seeds and in good quantity in their respective regions. During these workshops, it was noticed that women and young seed growers were underrepresented, especially in the West region. Therefore, efforts are needed to bring these disadvantaged groups on board through various actions, for example, encouraging women to own land for seed production. It must be noted, however, that seed producers in the Adamawa region are less knowledgeable than those in the West and Northwest in terms of GAPs for the production and conservation of seed potato and infrastructures.

One of the lessons drawn from the Ngaoundéré workshop was that consideration should be given to participants with language difficulties by providing translation for a better understanding and full participation.

Security measures were equally put in place for the prevention of the COVID-19 pandemic. These measures included the distribution of face masks, taking the temperature of participants each morning, the distribution of hydroalcoholic gels to each participant, as well as respecting physical distancing in the conference rooms during plenary sessions and during coffee and lunch breaks.

At the end of the workshops, the participants made some recommendations to be considered for future sessions as follows:

- Allocate more time to fieldwork than conference room sessions;
- Involve more youths and women that are in this domain to assure sustainability;
- Involve more seed growers in the Lebialem division (Aloh and Wabane subdivisions); and
- Train more seed growers to fill the gap of qualified persons to produce enough quality seed.

ANNEXES

Annex 1: Training workshop program for seed growers of the West region

Time	Activity	Trainer/Facilitator
Day 1 • Theory		
08h00 - 08h30	Arrival/welcome and installation of participants	FnA
08h30 - 09h40	Introductory remarks: presentation of CIP and the potato project	Victorine /Albert
09h40 - 09h50	Official opening of the workshop	DRADER West
09h50 - 10h00	Introduction of participants, reminder of the context and objectives of the workshop and validation of the program, logistical aspects, expectations of participants, rules of conduct, pedagogic objectives	Moderator
10h00 - 10h30	Expression of participants' needs in terms of knowledge on seed potato production and conservation	Moderator
10h30 - 11h00	Coffee - break • Family photo	FnA
11h00 - 11h20	Variety scheme - development of new varieties	Victorine
11h20 - 12h00	Seed Scheme – the seed sector	Victorine
12h00 - 12h30	Introduction to seed potato	Etienne
12h30 - 13h00	Land Selection and preparation, weeding and hilling-up	Ibrahim
13h00 - 14h00	Lunch - break	FnA
14h00 - 15h00	Disease and pest management	Eric
15h00 - 15h30	Positive and negative selection techniques	Albert
15h30 - 16h00	Dehauling	Albert
16h00	End of day 1	
Day 2 • Excursion		
08h00 - 08h30	Reminder of the previous day	Ibrahim
08h30 - 09h00	Harvesting, sorting, and grading	Honoré
09h00 - 09h30	Seed potato conservation	Etienne
09h30 - 10h00	The procedure of seed potato certification	Mme. Minkoma
10h00 - 10h30	Expression of individual needs to improve seed quantity and quality	Victorine
10h30 - 11h00	Evaluation of the workshop	Ibrahim
11h00 - 11h30	Coffee - break	FnA
11h30 - 14h40	Excursion to seed field in Djutittsa	Eric
14h40 - 15h00	Restitution	Moderator
15h00 - 15h20	Closing of the workshop	DRADER West

Annex 2: Training workshop program for seed growers of the Adamawa region

Time	Activity	Trainer/Facilitator
Day 1 • Theory		
08h00 - 08h30	Arrival / welcome and installation of participants	FnA
08h30 - 09h40	Introductory remarks: presentation of CIP and the potato project	Albert
09h40 - 09h50	Official opening of the workshop	DRADER Adamawa
09h50 - 10h00	Introduction of participants, reminder of the context and objectives of the workshop and validation of the program, logistical aspects, expectations of participants, rules of conduct, pedagogic objectives	Moderator
10h00 - 11h00	Expression of participants' needs in terms of knowledge on seed potato production and conservation	Moderator
11h00 - 11h30	Coffee - break • Family photo	FnA
11h30 - 12h30	Variety scheme - development of new varieties	Victorine
12h30 - 13h30	Seed Scheme – the seed sector	Victorine
13h30 - 14h30	Lunch - break	FnA
14h30 - 15h00	Introduction to seed potato	Cyrille
15h00 - 15h30	Land Selection and preparation, weeding and hilling-up	Ibrahim
15h30 - 16h30	Control of diseases and pests	Eric
16h30 - 17h00	Positive and negative selection techniques	Albert
17h00	End of day 1	
Day 2 • Theory		
08h00 - 09h30	Reminder of the previous day	Ibrahim
09h30 - 10h30	Dehaulming	Albert
10h30 - 11h00	Coffee - break	FnA
11h00 - 12h00	Harvesting, sorting, and grading	Eric
12h00 - 13h00	Seed potato conservation	Victorine
13h00 - 14h30	Seed potato certification procedure	Mme. Minkoma
14h30 - 15h30	Expression of individual needs to improve seed quantity and quality	Albert
15h30 - 16h00	Evaluation of the workshop	Ibrahim
16h00	End of day 2	
Day 3 • Excursion		
07h30 - 11h30	Excursion to seed field in Rep Yanga	Eric
11h30 - 11h50	Restitution	Moderator
11h50 - 12h00	Closing of the workshop	DRADER Adamawa

Annex 3: Training workshop program for seed growers of the Northwest region and Lebiale division

Time	Activities	Facilitator
Day 1 • Theory		
08h00 - 08h30	Arrival / reception and installation of participants	FnA
08h30 - 09h40	Welcome address from CIP - ProCISA	Victorine / Idriss
09h40 - 09h50	Official opening of the workshop	DRADER NORTHWEST
09h50 - 10h00	Introduction of participants, reminder of the context and objectives of the workshop and validation of the program, logistical aspects, expectations of participants, rules of conduct, pedagogical objectives.	Moderator
10h00 - 10h30	Expression of participants' knowledge gaps on seed potato production and conservation	Moderator
10h30 - 11h00	Coffe - break • Family photo	FnA
11h00 - 11h20	Variety scheme - development of new varieties	Victorine
11h20 - 12h00	Seed scheme - seed sector	Victorine
12h00 - 12h30	Introduction to seed potato	Lovelyn
12h30 - 13h00	Field selection and preparation, weeding and hilling-up	Ibrahim
13h00 - 14h00	Lunch - break	FnA
14h00 - 15h30	Management of pests and diseases	Richard
15h30 - 16h00	Positive and negative selection techniques	Eric
16h00	End of day 1	
Day 2		
08h30 - 09h00	Recap of the previous day	Ibrahim
09h00 - 09h30	Dehauling	Victorine
09h30 - 10h30	Harvesting, sorting, and grading	Richard
10h30 - 11h00	Coffee - break	FnA
11h00 - 11h45	Seed potato conservation	Lovelyn
11h45 - 13h00	Certification procedure for seed potato	DRCQ
13h00 - 14h00	Lunch - break	FnA
14h00 - 15h00	Seed survey with seed growers	Ibrahim
15h00 - 16h00	Expression of individual needs to improve seed quantity and quality	Victorine
16h00	End of day 2	
Day 3 • Field visit		
08h00 - 08h30	Assembly of participants at ADYS hotel for takeoff to the field	
08h30 - 13h30	Excursion to the seed field (details to follow)	Eric, Victorine, Richard
13h30 - 14h00	Workshop evaluation	Ibrahim
14h00 - 14h30	Restitution	Victorine, Richard
14h30 - 15h00	Closing	MINADER NW

Annex 4: List of participants at the Dschang training workshop for seed growers of the West region

N°	Name	Structure	Sex (M/F)	Function	Locality
01	Paul METENOU	MINADER - OUEST	M	Regional Delegate	Bafoussam
02	Honoré MAFOUO	MINADER - OUEST	M	Focal Point ProCISA-MINADER West	Bafoussam
03	MINKOMA Armande	DRCQ - Yaoundé	F	Head of the Seed and Plant Control Department	Yaoundé
04	Richard ANAGHO	MINADER - NORTH WEST	M	PROCISA-MINADER Focal Point Northwest	Bamenda
05	Moise KOUMTOUZOUÉ	MINADER -DRCQ	M	Regional Head of Service - DRCQ	Bafoussam
06	Etienne DJATSA	IRAD	M	Researcher	Dschang
07	Clinton NKIMIH	IRAD	M	Researcher	Foumbot
08	Norbert KENFACK	Private	M	Seed Grower	Nkong-Ni
09	Jean WOUAPI	Private	M	Seed Grower	Bana
10	Martin TCHUNKAM	Private	M	Seed Grower	Bandjoun
11	Georges Noel NTCHAMBA	Private	M	Seed Grower	BANGANGTE
12	Jacques TCHINDA	Private	M	Seed Grower	MBOUDA
13	Blaise DJEUFACK TAWA	Private	M	Seed Grower	FONGO TONGO
14	Zephyrin MBOUTSOP	MONTA CORPORATION	M	Seed Grower	Bangang
15	Marie Thérèse Mekaze	GIC ARIDYMA	F	Seed Grower	Foumbot
16	Herve Irene Tchiofouo	Private	M	Seed Grower	Bangang
17	Tchibiep Jean Claude	Private	M	Seed Grower	Balepo
18	Nimpa Gabriel	Private	M	Seed Grower	Balepo
19	Ngniapekem Pascal	Private	M	Seed Grower	Balepo
20	Makoge Kamta	Private	M	Seed Grower	Balepo
21	Djoufack Michel	Private	M	Seed grower	Dschang
22	Victor KENFACK	Private	M	Seed grower	Bangou
23	Laetitia SOSSOU	GIZ/ProCISA	F	Conseillère Technique en charge de la Pomme de terre	Bafoussam
24	Victorine FORNKWA YAYA	CIP	F	Varieties and Seeds Specialist	Bafoussam
25	Albert APAN	CIP	M	Agronomist, Regional Coordinator	Ngaoundere
26	Eric TIOZANG	CIP	M	GAP Training Consultant	Bafoussam
27	Ibrahim ADAMU	CIP	M	M&E and Knowledge Sharing	Yaounde
28	Ingrid FOGUE	CIP	F	FnA Assistant	Yaounde
29	Bachir Fouapon	CIP	M	Logistics	Bafoussam
30	Brice TEZANOU	CIP	M	Logistics	Ngaoundere

Annex 5: List of participants at the Ngaoundéré training workshop for seed growers of the Adamawa region


N°	Name	Structure	Sex (M/F)	Function	Locality
01	Haman Dawai Raymond	MINADER – AD	M	Regional Delegate	Ngaoundéré
02	Wafilssa Todou	MINADER – AD	M	ProCISA Focal Point	Ngaoundéré
03	MOHAMAN SOUNOUSSI	MINADER – AD	M	Regional Seed Controller	Ngaoundéré
04	BIYAK Cyrille	IRAD Wakwa	M	Researcher	Wakwa
05	MINKOMA Armande	DRCQ - Yaoundé	F	Head of the Seed and Plant Control Department	Yaoundé
06	Raoubil Yaya	DRCQ - AD	M	Seed controller	Ngaoundere
07	Jules Towa	STRUCTURE TOWA	M	Director	Wassande
08	Mamadou Baguirou	Société Coopérative Simplifiée des Producteurs de Pomme de Terre (SCOOPS Jeunes entrepreneurs)	M	Seed grower	Vela-Mbaï
09	Mohamadou Hamayadji	Société Coopérative avec Conseil d'Administration des Producteurs de Pomme de Terre « COOP-CA MAYO-YAKOUBOU »	M	Seed grower	Dibi
10	Nago Zemkou Eric Beauclair	Société Coopérative des Producteurs Solidaires de Pomme de Terre du Mbéré (SOCOSPOM)	M	Seed grower	Meiganga
11	Nana Attikou-Attikou	Société Coopérative des Producteurs de la Pomme de Terre de Tibati (SCOOP-CA PPT)	M	Seed grower	Tibati
12	Bello Docko	Private	M	Seed grower	Wassande
13	Mohamadou Bassirou	Société Coopérative des Acteurs de la Filière Pomme de Terre de la Vina (SCOOPAFPTV)	M	Seed grower	Rep yanga
14	Nana Djoubairou	Société Coopérative avec Conseil d'Administration de Production et de Commercialisation de la Pomme de Terre (SCOOP-CAPCPT)	M	Seed grower	Mai-Borno
15	Halimatou ADJIA	GIC CAPITAL	F	Seed grower	Ngaoundéré
16	Kwava TIZE	COOP CA AGRICULTEURS DE SECONDE GENERATION	M	Production des semences de maïs, soja, haricot, manioc et pomme de terre	Nyambaka
17	Bakary Abbo	Private	M	Seed grower	Darang
18	CHEICK DAHIROU	Private	M	Seed grower	Banyo
19	MAYO Françoise	SCOOP-CA PROMAHO	F	Seed grower	Ngaoundéré

N°	Name	Structure	Sex (M/F)	Function	Locality
20	ADAMA	SOCOMAD	F	Seed grower	Ngaoundéré
21	Ibrahima OUMATE	Semencier de pomme de terre	M	Seed grower	wassande
22	BEBE KOULSOUMI	GIC des Productrices de Pomme de terre "GIC FEMMES SOLIDAIRES BELPAÏ"	F	Representative	MBALANG-MODIBO
23	FADIMATOU HADJA	GIC des producteurs de pomme de terre « GIC MOYAL NGASSIRI » de NGASSIRI	F	Representative	NGASSIRI
24	HAOUAOU MARZANATOU	Société coopération des femmes productrices de semences de pomme de terre « COOP-CA PROSEPOM »	F	PCA	SELBE DARANG/VINA
25	Kouyem Guy Francis	GIZ/ProCISA	M	Regional Technical Adviser	Ngaoundéré
26	Souleymanou MAIKANO	APROSPEN	M	Coordinator of trainers	Belel
27	Victorine FORNKWA YAYA	CIP	F	Varieties and Seeds Specialist	Bafoussam
28	Eric TIOZANG	CIP	M	GAP Training Consultant	Bafoussam
29	Ibrahim ADAMU	CIP	M	M&E and Knowledge Sharing	Yaoundé
30	Albert APAN	CIP	M	Regional Coordinator	Ngaoundéré
31	Brice TEZANOU	CIP	M	Logistics	Ngaoundéré


Annex 6: List of participants at the Dschang training workshop for seed growers of the Northwest region and Lebialem division

N°	Name and surname	Structure	Sex (M/F)	Function	Place
1	Thomas FUCHI SONG	MINADER - NW	M	Regional Delegate	Bamenda-Mezam
2	Njegani NGANSA	MINADER - NW	M	Regional Chief	Bamenda-Mezam
3	Daniel ASONG	MINADER - SW	M	Divisional Delegate Lebialem	Buea
4	Tamela Clement Wara	Private	M	Seed grower	Mbei- Santa
5	Mokom Daniel Njawah	Private	M	Seed grower	Mbei- Santa
6	Achidi Edwin Mijingni	Private	M	Seed grower	Mbei- Santa
7	Wirsiy Patrick	Private	M	Seed grower	Tadu-Bui
8	Chantal Kemjei	Private	F	Seed grower	Manchock-Bui
9	Ntumu Ngoh Lilian Bawe	Private	F	Seed grower	Ndu-Donga Mantung
10	Nasah Fulai Camilla	Private	F	Seed grower	Fundong- Boyo
11	Afuh Mathias Nyah	Private	M	Seed grower	Ashong-Momo
12	Ngonange Anguh Paul	Private	M	Seed grower	Kedjom Ketinguh-Mezam
13	Bah Oliver Keming	Private	M	Seed grower	Bambili- Mezam
14	Lucy Noza Experience Incorporated Cameroon (EIC)	Cooperative	F	President	Santa-Mezam
15	Bertine NKONGLA MASSAB	Training Center	F	RCA Bambili	Bambili-Mezam
16	Chief Forghab Fosimondi	Private	M	Seed grower	Bamock-Mezam
17	Fobuzo Benjamin Chefor	Private	M	Seed grower	Awing-Mezam
18	Wam Francis Cheng	Private	M	Seed grower	Anyajua-Boyo
19	Vuchas Cyril Akumbom	Private	M	Seed grower	Kedjom Keku-Mezam
20	Asangana Grace Njua (BCACU Ltd)	Cooperative	F	Seed grower	Bamenda II-Mezam
21	JUMBAM Usmanu Vershiyi	Private	M	Seed grower	Tatum-Bui
22	Nkempu Albert	Private	M	Seed grower	Alou
23	Nkemze Pascal Tsamoh	Private	M	Seed grower	Alou
24	Azange Leku Lucas	Private	M	Seed grower	Wabane
25	Leku Augustine	Private	M	Seed grower	Wabane
26	Njoku Sidwarn Yimni	Private	M	Seed grower	Alou
27	Ndongmoh Lawrence	Private	M	Seed grower	Wabane

Annex 7: Opening speech of the DRADER West delivered at the Dschang training workshop held on 26 April 2021

<p>République du Cameroun Paix – Travail – Patrie</p> <p>Ministère de l'Agriculture et du Développement Rural</p> <p>Délégation Régionale de l'Ouest</p> <p>Tél : 233-44-12-48 233-44-14-44 233-44-27-76</p> <p></p> <p>Republic of Cameroon Peace – Work – Fatherland</p> <p>Ministry of Agriculture and Rural Development</p> <p>Regional Delegation of the West</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>DISCOURS DE MONSIEUR LE DELEGUE REGIONAL DE L'AGRICULTURE ET DU DEVELOPPEMENT RURAL DE L'OUEST A L'OCCASION DE LA CEREMONIE D'OUVERTURE DE L'ATELIER DE FORMATION DES SEMENCERS SUR LES BONNES PRATIQUES AGRICOLES DE PRODUCTION DE SEMENCES DE POMMES DE TERRE (DSCHANG, 26-27 – 04- 2021).</p> </div> <p style="text-align: center;">1</p>	<ul style="list-style-type: none"> - Madame la Conseillère technique principale du Projet GIZ ProCISA ici représenté ; - Mesdames et Messieurs les responsables du Centre International de la Pomme de terre (CIP) ; - Messieurs les producteurs de semences de pommes de terre de la Région de l'Ouest ; - Mesdames, Messieurs. <p>C'est avec beaucoup de plaisir que je préside ce jour à l'hôtel ADYS de Dschang, la cérémonie <u>d'ouverture</u> de l'atelier de renforcement des capacités des semenciers de la Région de l'Ouest sur les bonnes pratiques agricoles de production de semences de pommes de terre.</p> <p>Permettez-moi, avant toute chose, de vous souhaiter, à toutes et à tous, une chaleureuse et cordiale bienvenue dans cette salle.</p> <p>En cette circonstance solennelle, <u>j'aimerais d'entrée</u> de jeu, rendre un hommage bien mérité aux responsables du projet GIZ - ProCISA en général et au Centre International de la Pomme de terre (CIP) en particulier pour tous ce qu'ils font pour le développement de la chaîne de valeur pomme de terre au Cameroun.</p> <p>Mesdames, Messieurs, chers producteurs de semences de pomme de terre ; Dans son initiative spéciale « Un monde sans faim », la Coopération allemande BMZ entend contribuer de manière significative à la réduction de la pauvreté et de la faim dans les pays en développement. Au Cameroun ce projet s'inscrit dans le cadre du projet global - « Centres d'innovations vertes pour le secteur agro-alimentaire » (ProCISA) qui a contracté le Centre International de la Pomme de Terre et Patate douce (CIP) pour soutenir le secteur de la pomme de terre à travers un projet intitulé « Développement de la Chaîne de Valeur Pomme de terre (DCVP).</p> <p>Dans sa troisième composante, le projet DCVP vise à établir un système national de semences durable pour améliorer l'accès des agriculteurs et des coopératives aux semences de qualité et aux variétés résistantes aux maladies et demandées par le marché, afin d'accroître la productivité et la résilience. À cette fin,</p> <p style="text-align: center;">2</p>
<p>ce projet prévoit de rétablir et de renforcer le système national de semences intégrant la multiplication locale des semences de pommes de terre et l'introduction des nouvelles variétés qui seront multipliées localement.</p> <p>Ainsi, environ 25 multiplicateurs de semences ont été sélectionnés dans la Région de l'Ouest et sont concernés par cet atelier.</p> <p>L'objectif général de cet atelier est de former au moins 21 producteurs de semences dans les régions de l'Ouest sur les Bonnes Pratiques Agricoles (BPA) de multiplication en champ et de stockage des semences de pommes de terre.</p> <p>Plus spécifiquement, il s'agit de :</p> <ul style="list-style-type: none"> ➢ Identifier les lacunes des participants en matière de connaissances sur la production et le stockage des semences de pommes de terre ainsi que les principales contraintes rencontrées ; ➢ Présenter les schémas standard de variétés et de semences adaptées au contexte local ; ➢ Améliorer les connaissances des participants sur les BPA pour la production, la protection et le stockage des semences de pommes de terre ; et ➢ Identifier les besoins individuels et définir les plans d'action individuels. <p>À l'issue de cette formation, les résultats attendus sont les suivants :</p> <ul style="list-style-type: none"> • Les lacunes des participants en matière de production, de protection et de stockage des semences de pommes de terre, ainsi que les contraintes rencontrées, sont identifiées ; • Les schémas standard de variétés et de semences sont présentés et discutés ; • Les participants connaissent les BPA pour la production, la protection et le stockage des semences de pommes de terre ; et • Les besoins individuels pour améliorer la qualité et la quantité des semences sont identifiés et des plans d'action individuels sont définis. <p style="text-align: center;">3</p>	<p>Je suis persuadé que les échanges d'idées et d'expériences au cours de cette importante rencontre seront fructueux pour tout le monde et contribueront à l'amélioration des connaissances sur la production des semences des pommes de terre. J'espère que les connaissances qui seront reçues seront efficacement utilisées <u>pour améliorer</u> la quantité et la qualité des semences des pommes de terre afin que la chaîne de valeurs pomme de terre prenne son envol dans la Région de l'Ouest</p> <p>C'est sur cette note d'espoir que je déclare ouvert cet atelier de formation des semenciers sur les bonnes pratiques agricoles de production de semences de pommes de terre.</p> <p>Vive la Région de l'Ouest ; Vive le Ministère de l'Agriculture et du Développement Rural ; Vive la coopération Cameroun-Allemagne ; Vive le Cameroun et son illustre chef, son Excellence Paul Biya, Promoteur de l'Agriculture de seconde génération.</p> <p style="text-align: right;">Je vous remercie pour votre aimable attention.</p> <p style="text-align: center;">4</p>

Annex 8: Opening speech of the DRADER Adamawa delivered at the Ngaoundéré training workshop held on 5 May 2021

<div data-bbox="274 434 453 524" data-label="Page-Header"> <p>REPUBLIQUE DU CAMEROUN Pais-Travail-Paix MINADER REGION DE L'ADAMAOUA DELEGATION REGIONALE DE L'AGRICULTURE ET DU DEVELOPPEMENT RURAL DE L'ADAMAOUA</p> </div> <div data-bbox="456 439 574 501" data-label="Page-Header">  </div> <div data-bbox="577 434 705 524" data-label="Page-Header"> <p>REPUBLIC OF CAMEROON Peace-Work-Fatherland ADAMAOUA REGION DELEGATION OF AGRICULTURE AND RURAL DEVELOPMENT</p> </div> <div data-bbox="277 669 705 795" data-label="Section-Header"> <p>DISCOURS DE MONSIEUR LE DELEGUE REGIONAL DE L'AGRICULTURE ET DU DEVELOPPEMENT RURAL DE L'ADAMAOUA A L'OCCASION DE LA CEREMONIE D'OUVRETURE DE L'ATELIER DE FORMATION DES SEMENCIERS DE POMME DE TERRE DANS LA REGION DE L'ADAMAOUA</p> </div> <div data-bbox="499 987 679 1014" data-label="Text"> <p><i>Ngaoundéré le 05 Mai 2021</i></p> </div>	<ul style="list-style-type: none"> • Madame la Représentante du Directeur de la Réglementation et du contrôle de la qualité des intrants et des produits agricoles ; • Monsieur le Conseiller Technique Régional du Projet GIZ / ProCISA ; • Monsieur le Coordonnateur Régional du Centre International de la Pomme de terre et Patate douce (CIP) ; • Mesdames et Messieurs les Responsables des Structures partenaires en vos rangs et grades respectifs ; • Mesdames et Messieurs les semenciers de la pomme de terre ; • Chers participants mesdames et messieurs. <p>C'est pour moi un réel plaisir et un agréable devoir de présider ce jour, au nom du Ministre de l'Agriculture et du Développement Rural GABRIEL MBAIROBE, la cérémonie d'ouverture de l'atelier de formation des semenciers de pomme de terre dans la Région de l'Adamaoua organisé par le Centre International de la Pomme de terre et Patate douce (CIP), partenaire de mise en œuvre du Projet GIZ ProCISA pour la chaîne de valeur pomme de terre.</p> <p>Je voudrais avant toute chose, souhaiter à chacun de vous, une chaleureuse et cordiale bienvenue dans cette belle salle de conférences de l'Hôtel TRANSCAM de Ngaoundéré, retenue pour servir de cadre au déroulement de cette session de formation.</p> <p>Je profite pour exprimer toute la gratitude du Gouvernement camerounais à l'endroit du Ministère Fédéral Allemand de la coopération et du Développement Economique (BMZ), pour les actions d'accompagnement menées en faveur de notre politique nationale de développement du secteur rural en général, et pour avoir permis cette nouvelle phase du Projet GIZ-ProCISA d'autre part.</p> <p>Mes remerciements vont également à l'endroit du Centre International de la pomme de terre et de la patate douce, pour l'intérêt qu'il porte à notre</p>
<ul style="list-style-type: none"> • Mesdames et Messieurs, Chers participants, <p>Le Projet « Centres d'Innovations Vertes pour le Secteur Agro-alimentaire » (ProCISA) est une initiative du Ministère Fédéral Allemand de la Coopération et du Développement économique (BMZ) qui entend contribuer de manière significative à la réduction de la pauvreté et de la faim dans le monde afin d'atteindre l'objectif du millénaire « un monde sans faim ».</p> <p>L'objectif du ProCISA est de promouvoir les innovations agricoles et agro-alimentaire afin d'améliorer les revenus des petits exploitants agricoles ainsi que l'emploi et l'approvisionnement régional en denrées alimentaires et contribuer de ce fait à la sécurité alimentaire des populations.</p> <p>La mise en œuvre de ce projet se déroule sous la double tutelle du MINADER et du MINEPIA.</p> <p>Au cours de la première phase du projet, des appuis importants constitués : des semences améliorées, des équipements agricoles et d'élevage et bien d'autres choses ont été remis aux organisations des Producteurs et d'éleveurs de la Région.</p> <p>Par ailleurs les producteurs de pomme de terre et les multiplicateurs des semences ont suivi des formations innovantes dans divers domaines notamment en itinéraires techniques, développement organisationnel, entrepreneuriat agricole.</p> <p>C'est donc dans le cadre des activités de la nouvelle phase du dit projet à savoir ProCISA sur le terrain que cet important atelier sur la production et la conservation des semences et variétés de pomme de terre est organisé.</p> <p>Cet atelier a pour objectifs entre autres :</p>	<ul style="list-style-type: none"> • D'identifier les lacunes des participants en matière de connaissances sur la production et le stockage des semences de pommes de terre ainsi que les principales contraintes rencontrées ; • De Présenter les schémas standard de variétés et semences adaptées au contexte local ; • D'Améliorer les connaissances des participants sur les Bonnes Pratiques Agricoles pour la production, la protection et le stockage des semences de pomme de terre • et • D'identifier les besoins individuels et définir les plans d'action individuels. <p>Je suis convaincu que cet atelier se déroulera dans les bonnes conditions et au regard de la qualité des participants que les résultats visés seront atteints.</p> <p>C'est sur cette note d'espoir que je déclare ouvert au nom du ministre de l'Agriculture et du Développement Rural l'atelier de formation des semenciers de pomme de terre dans la région de l'Adamaoua</p> <p>Vive l'agriculture et le développement rural, Vive la coopération Cameroun -Allemagne, Vive la Coopération Cameroun-CIP Vive le Cameroun et son illustre Chef, le Président Paul BIYA.</p> <p>Je vous remercie pour votre aimable attention.</p>

Annex 9: Closing speech of the DRADER Adamawa delivered at the Ngaoundere training workshop held on 7 May 2021

REPUBLIQUE DU CAMEROUN
Paix-Travail-Patrimoine
REGION DE L'ADAMAOUA
DELEGATION REGIONALE DE
L'AGRICULTURE ET DU DEVELOPPEMENT
RURAL DE L'ADAMAOUA

Minader
Ministère de l'Agriculture et du Développement Rural

REPUBLIC OF CAMEROON
Peace-Work-Patrimoine
ADAMAOUA REGION
ADAMAOUA REGIONAL
DELEGATION OF AGRICULTURE
AND RURAL DEVELOPMENT

- Madame la Représentante du Directeur de la Réglementation et du contrôle de la qualité des intrants et des produits agricoles ;
- Monsieur le Conseiller Technique Régional du Projet GIZ / ProCISA ;
- Monsieur le Coordonnateur Régional du Centre International de la Pomme de terre et Patate douce (CIP);
- Mesdames et Messieurs les Responsables des Structures partenaires en vos rangs et grades respectifs ;
- Mesdames et Messieurs les semenciers de la pomme de terre ;
- Chers participants mesdames et messieurs.

Nous voici réunis sur le site de démonstration des bonnes pratiques agricoles de la pomme de terre de REY YANGA après deux jours de formation théorique et pratique afin de clôturer les travaux de l'atelier de formation des semenciers de pomme de terre dans la Région de l'Adamaoua organisé par le Centre International de la Pomme de terre et Patate douce.

Je voudrais d'entrer de jeu vous présenter au nom du Ministre de l'Agriculture et du Développement Rural Gabriel MBAIROBE nos remerciements pour les sacrifices consentis par les uns et les autres et pour l'heureux aboutissement de ces assises.

A l'ouverture de cet atelier, je vous rappelle les objectifs de cette formation qui étaient :

- D'identifier les lacunes des participants en matière de connaissances sur la production et le stockage des semences de pommes de terre ainsi que les principales contraintes rencontrées ;
- De Présenter les schémas standard de variétés et semences adaptées au contexte local ;
- D'Améliorer les connaissances des participants sur les Bonnes Pratiques Agricoles pour la production, la protection et le stockage des semences de pomme de terre
- et
- D'identifier les besoins individuels et définir les plans d'action individuels.

**DISCOURS DE MONSIEUR LE DELEGUE REGIONAL
DE L'AGRICULTURE ET DU DEVELOPPEMENT
RURAL DE L'ADAMAOUA A L'OCCASION DE LA
CEREMONIE DE CLOTURE DE L'ATELIER DE
FORMATION DES SEMENCIERS DE POMME DE
TERRE DANS LA REGION DE L'ADAMAOUA**

Ngaoundéré le 06 Mai 2021

Je suis heureux, au terme de cette rencontre de voir avec quel enthousiasme vous avez pris part à cet atelier. Ce qui traduit à n'en point douter votre engagement à participer à la lutte contre la faim et la pauvreté en milieu rural cheval de bataille de son Excellence Paul BIYA et implémenté sur le terrain dans notre secteur par le MINADER.

- Mesdames et Messieurs, Chers participants,

Je saisis cette opportunité pour une fois de plus saluer cette initiative louable du CIP et l'exhorte à faire davantage pour le renforcement de cette filière pomme de terre dans notre région.

Je remercie également tous les intervenants qui ont œuvré pour la tenue de cette session de formation.

Au moment où nous nous apprêtons à nous séparer, je souhaite aux uns et aux autres un bon retour dans leurs familles et localités respectives.

**Vive l'agriculture et le développement rural,
Vive la coopération Cameroun-Allemagne,
Vive la Coopération Cameroun-CIP
Vive le Cameroun et son illustre Chef, le Président Paul BIYA.
Je vous remercie pour votre aimable attention.**

Annex 10: Opening speech of the DRADER Northwest delivered at the Dschang training workshop held on 09 August 2021

Opening speech presented by the Regional Delegate of Agriculture and Rural Development – North West at the Training workshop of Solanum potato Seed Growers on good agricultural practices, organized by CIP-Cameroon this Monday 9th August 2021 at ADYS Hotel - Dschang

- The representative of the International Potato Centre, Cameroon
- The resource persons to this training workshop
- Solanum potato seed growers of the North West and south west Region
- Ladies and gentlemen

I am profoundly grateful for the opportunity to be part of this training workshop on good agricultural practices for Seed Growers of Solanum potatoes of the North West and South West Regions. I am more grateful for the privilege to preside over the opening ceremony.

Before I proceed, permit me to heartily welcome all of you seed growers for braving the security challenges in your Regions as well as abandoning crucial farming activities at this period of the year to participate in this training workshop. Your massive presence at this workshop is eloquent testimony of the importance you attach to potato production.

My sincere gratitude on behalf of the Minister of Agriculture and Rural Development goes to the Federal Republic of Germany through Green Innovation Centres for the Agriculture and Food Sector (ProCISA) and the International Potato Centre (CIP) for the resolve to significantly reduce poverty and hunger in Developing countries particularly Cameroon through the implementation of a Potato Value Chain Development project with the aim of establishing a sustainable national seed system which shall improve farmers' access to quality, disease-

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resistant and market demanded varieties of potato seed for increase productivity and resilience.

This project is therefore a welcome relief to the potato farmers of the Northwest and parts of the South who for sometimes now have been deprived of quality potato seeds due to the socio-political crisis which has rendered impossible the production of quality basic seeds by IRAD. My immense gratitude once more goes to CIP for finding a means to continue to work with the farmers of Northwest and South west despite the security challenges of the two regions.

May I recall to you that Solanum potato is one of the strategic crops that the Ministry of Agriculture and Rural Development is promoting to contribute to increase in national food production and supply; sustainable increase in incomes and living standards of the rural populations and rural poverty reduction.

The contribution of potato to these important missions of MINADER will only be attained if we have good quality and disease free or resistant varieties of seeds. Important to note that good quality seeds in potato production contributes more than 30% of good yields. Dear seed producers, you have been identified as a seed producer and CIP has taught it wise to further build your capacity on seed production considering the important place quality seeds play in the production chain of solanum potatoes. The success of the MINADER missions in the solanum potato sector lies in your hands.

Dear participants, you are privileged to have been given this opportunity to improve your knowledge and skills in potato seed production. Make good use of it by being attentive, ask questions for better understanding and share your personal experiences on potato production so as to be well equipped with Good Agricultural Practices for increased production in terms of quantity and quality of potato seeds.

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We have moved out to Dschang to hold this workshop because of the socio-political crisis that is prevailing in the two English speaking Regions that hinder CIP from bringing the training close to our doorsteps. We very much appreciate the good intentions of CIP to sought alternative methods to continue to work with the Northwest and South west Regions in the potato sub sector and in the prevailing circumstances. We want to assure CIP that many potato farmers in these two Regions are actively on their farms and will need quality potato seeds to boost potato production.

To the German Federal government, the International Potato Centre, and ProCISA I promise on behalf of the services of the Ministry of Agriculture and Rural Development to do everything in our powers to ensure that the implementation of the Potato Value chain Development project goes hitch free in the North West and South West regions.

On this note, ladies and gentlemen, I declare opened this training workshop on Good Agricultural Practices for the production of solanum potato seeds.

Thank you for your keen attention

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CIP is a research-for-development organization with a focus on potato, sweetpotato and Andean roots and tubers. It delivers innovative science-based solutions to enhance access to affordable nutritious food, foster inclusive sustainable business and employment growth, and drive the climate resilience of root and tuber agri-food systems. Headquartered in Lima, Peru, CIP has a research presence in more than 20 countries in Africa, Asia and Latin America.

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