

**Improving potato production for increased food security of  
indigenous communities in Colombia**

**Inception Meeting Report  
June 21, 2012**

**Principal Investigators:** Ajjamada Kushalappa and Teresa Mosquera

**Contents**

|   |    |
|---|----|
| <b>Section A</b> .....  | 2  |
| <b>Activities before the inception meeting</b> .....                            | 2  |
| Memorandum of understanding.....  | 2  |
| Ethics Committee approval.....  | 2  |
| Milestones and contract development.....  | 2  |
| <b>Section B</b> .....  | 2  |
| <b>Inception meeting report</b> .....   | 2  |
| Objectives of the inception meeting.....  | 2  |
| Participants in Bogotá meeting .....  | 3  |
| Summary of the meeting .....  | 3  |
| The inception meeting report presentation format .....                          | 4  |
| Research themes: key accomplishments, decisions, challenges, and moving forward | 4  |
| Theme I: Gender and daily nutrition.....  | 4  |
| Theme II: Nutritional quality of potato genotypes.....                          | 5  |
| Theme III: Potato breeding .....  | 8  |
| Theme IV Community Education.....   | 10 |
| General presentations and suggestions.....                                      | 10 |
| Evaluation strategy.....  | 10 |
| Scalability.....  | 10 |
| Communication strategy.....   | 11 |
| Evaluation of the Inception meeting.....  | 12 |
| Meeting in Pasto .....  | 13 |
| Annex list.....   | 17 |

# **Improving potato production for increased food security of indigenous communities in Colombia**

## **Inception Meeting Report June 21, 2012**

**Principal Investigators:** Ajjamada Kushalappa and Teresa Mosquera

### **SECTION A**

#### **Activities before the inception meeting**

##### **1. Memorandum of understanding**

A memorandum of understanding was developed among McGill, Universidad Nacional de Colombia, Fundelsurco, Centro Internacional de la Papa (CIP) and the University of New Brunswick. The document is in its final form and ready for signatures.

##### **2. Ethics committee approval**

La Universidad Nacional de Colombia (UNC) has developed an Ethics Committee document and has already been signed by the authorities. McGill has developed an Ethics Committee document and is expected to be signed this week. (It was expected to be signed by June 30/12).

##### **3. Milestones and contract development**

Over several skype discussions with all the researchers and the IDRC team we finally developed a milestone document. This has been used in developing the contract, between IDRC and separately with McGill and UNC.

### **SECTION B**

#### **Inception meeting report**

**Objectives of the inception meeting:** The inception meeting was carried out from May 14 to 19, 2012, pursuing the following objectives:

1. To reach a common understanding about Project, subprojects and achievements
2. To reach agreements for subprojects execution.
3. To define monitoring and evaluation strategy.

4. To define indicators for Project evaluation.
5. To define a communication strategy.
6. To define project methodologies and results scalability.
7. To take decisions regarding gender strategy implementation.
8. To take decisions regarding environmental strategy implementation.
9. To strengthen the appropriation process with regional authorities and communities involved.
10. To precise budget and administration processes

### **Participants in Bogotá meeting**

1. McGill University Professors:
  - Ajjamada Kushalappa, Stan Kubow, Philip Oxhorn.
2. New Brunswick University Professors
  - Helen Tai
3. International Potato Research Center researchers
  - Merideth Bonierbale, Thomas Zum Felde
4. Fundelsurco Directors
  - Sonia Navia, Andrés Mosquera
5. Universidad Nacional de Colombia: Professors
  - Teresa Mosquera, David Cuéllar, Sara del Castillo, Leonor Perilla, Luis Ernesto Rodríguez, Patricia Restrepo, Patricia Heredia
6. Universidad Nacional de Colombia: assistants
  - María Cecilia Delgado, Lina López, Nelly Argüello, Catalina González, Sonia Tinjacá, Felipe Sarmiento (Postdoc)
7. Universidad Nacional de Colombia: students
  - Deissy Juyo, María Fernanda Álvarez, Clara Bianeth Peña, Diana Vargas, Diana Duarte, Clara Piñeros, Alexandra Guateque, Johanna Bustos, Claudia López (McGill Intern).
8. Universidad de Nariño professors: Fernando Navia
9. IDRC officers
  - Renaud Deplaen, Delphine Larrouse

### **Summary of the meeting**

The inception meeting started with full enthusiasm of all the researchers involved. Everyone was happy on our successful funding and all wanted to do their best. At the outset the meeting structure and overview of the project was presented. Following this all the project coordinators presented their specific projects and concluded with milestones that would be achieved. This clarified for all of us what is involved in the project and how different projects are interlinked in not only execution but also in delivering the end projects. This was followed by individual theme group meetings where the interconnectivity of projects, dependency for potato genotypes and facilities to conduct the proposed experiments, and challenges facing project execution was discussed. Time needed for the multiplication of potato genotypes was warned as a delay in the whole process and all were warned to start their experiments only from August, when the seed tubers will be

made available. The repairing of green house and purchase of equipment were also predicted to be delayed.

### **The inception meeting report presentation format**

The inception meeting agenda is attached (Annex 1). Since our project had seven objectives we decided to group a few of the related ones into themes, so that we can visualize and execute better. We identified four themes and the inception meeting was structured based on these four themes, and under each theme researchers presented their research methodologies and showed how they will lead to the milestones. This structure will be maintained throughout this program. All research coordinators presented the subprojects or components on the first day of the meeting. The PowerPoint slides of presentations are attached (Annex 2). Following this we had group discussions on interrelationships among components of the project. The key accomplishments so far, decisions made with respect to some challenges and we are moving forward is discussed, under each activity. The general discussion and some general suggestions, however, are separately presented. The inception meeting objectives given above have been taken into consideration to write this report. In addition, project indicator document is presented at the end.

### **Research themes: key accomplishments, decisions, challenges, and moving forward**

All inception meeting activities have been discussed within research themes in order to obtain insight into problems associated with objectives and activities that are described in our original project. We now have four themes, within themes we have our seven objectives, within each objective several activities (numbered as subsections of objectives) or subprojects that are described in our original proposal. Readers are requested to refer to these objectives and activities in our original project for details and to visualize links to the changes made here.

**THEME I: Gender and daily nutrition:** Coordinators: Prof. Sara Del Castillo and Prof. Leonor Perilla.

- Obj. 1:** Characterize the daily diet of indigenous communities and develop a manual on Good Diet Practices.
- Obj. 6:** Identify sustainable strategies to empower Nariño's indigenous women as axes for the achievement of Food Security and Nutrition for their families and their communities.
- Obj. 7:** Establish public policy advocacy strategies for the incorporation of the results of the project.

It was contacted ICBF (Colombian Family wealth Institute) in Colombia in order to get a cooperative job

### ***Milestones to be achieved:***

**Activity 1.1, 1.2. Dailey diet:** Professor Sara Del Castillo.

**Key accomplishments:** An ethical report document has been signed by the local authorities. The methodologies as stated in the project will be followed.

**Decisions, challenges and moving forward:** In the project some of the nutrients were supposed to be quantified based on NIRS. But NIRS is a very rough estimate and false positives and negatives are high. Also takes long time to standardize. Accordingly, UHPLC was recommended for use by UNC (suggested by Stan Kubow and Thomas Zum). The UNC will standardize the protocol and present this in the next report (December).

**Activity 6.1, 6.2, 6.3. Family roles and gender,** Prof. Leonor Perilla Lozano

**Key accomplishments** The consent forms from municipal majors and from the Colimba cabildo governor is already signed. The base line is being built from secondary sources of information. Local authorities have been contacted and they will participate in the definition of intervention strategies with gender approach. They are being invited to get involved in the research stages and, of course, in the meetings to discuss strategies on public policies regarding gender.

**Decisions, challenges and moving forward:** The project will be executed as detailed in the project proposal.

**Activity 7.1. Public policy, working with communities and empowering women:** Philip Oxhorn.

**Key accomplishments:** He will assist the food security and nutrition and family roles and gender groups, and the transversal objective regarding to public policies.

**Decisions, challenges and moving forward:** The project will be executed as in the proposal.

**THEME II: Nutritional quality of potato genotypes:** Coordinators: Prof. Luz Patricia Restrepo and Dr. Thomas Zum Felde.

**Obj. 3:** Select potato genotypes for minerals, nutrients and functional foods (Table 1).

**Obj. 7.** Establish public policy advocacy strategies for the incorporation of the results of the project.

ICBF has been informed about Project Objectives and deliverables regarding nutritional quality.

**Milestones:**

**Activity 3.1.1. Component: Nutritional quality.** Prof. Luz Patricia Restrepo.

***Key accomplishments:*** The project will be executed with minor modifications to the number of samples needed for analysis.

***Decisions, challenges and moving forward:*** The group finds that it is possible to reduce some repetitions in the Phureja collection, according to Maria Fernanda's research results.

**Table 1.** Plant material will be employed in different analysis in the project. It shows the code material and numbers represent the amount of genotypes will be used in each analysis.

| Name of potato germplasm | Code | Responsible  | Institution | TOTAL | Participatory breeding research | Nutrition CIP | NIRS- CIP | Functional Food | Chemical Analyses | Field evaluation <i>P. infestans</i> | Metabolomics          | Genomics | Observations  |
|--------------------------|------|--|-------------|-------|---------------------------------|---------------|-----------|-----------------|-------------------|--------------------------------------|-----------------------|----------|---|
| Indigenous               | A    | Luis Ernesto Rodríguez, Sonia Tinjacá                        | UNC         | 15    |                                 | 15            | 10        | 10              | 15                | 15                                   | 10<br>(7 indig-3 adv) | 15       | Functional food, metabolomics and genomics  |
| Advanced clones          | B    | Luis Ernesto Rodríguez, Sonia Tinjacá                        | UNC         | 70    | 12                              | 30            | 70        | 12              | 12                | 30                                   | 10                    | 30       | 70 clones include the same genotypes to be used in metabolomics and genomics and nutrition. This selection will be done by Prof. Luis Ernesto   |
| Micronutrient dense      | C    | Merideth Bonierbale  | CIP         | 10    |                                 |               |           | 5               |                   |                                      |                       |          | 5 tetraploid accessions and 5 diploid accessions (from Canada)  |
| <i>Solanum phureje</i>   | D    | Maria Cecilia Delgado, Sonia Tinjacá, Luis Ernesto Rodríguez | UNC         | 104   |                                 | 36            | 68        | 10              | 104               | 104                                  | 10                    | 104      | Prof. Luis Ernesto will do the agronomic evaluation. 5 resistant genotypes, the most susceptible  |
| Commercial               | E    | Luis Ernesto Rodríguez, Sonia Tinjacá                        | UNC         | 10    |                                 | 5             |           | 5               | 6                 | 5                                    | 5                     | 5        | Ploidy level won't be considered. Objectives: to be consumed by Colombians. It is recommended to be resistant to late blight (Tuquerreña, Pastusa Suprema, Parda Pastusa, Galeras, Latina, Colombia. It will be sent to different groups. |
| Late blight resistance   | F    | Merideth Bonierbale  | CIP         | 10    |                                 |               |           |                 |                   | 10                                   | 10                    | 10       | It will be sent tetraploid and diploid genotypes to be evaluated for late blight responses. It was suggested to send plants to different groups.  |
| Progenitors              | G    | Merideth Bonierbale  | CIP         | 11    |                                 | 11            | 11        |                 |                   |                                      |                       | 11       | 4 diploid ( <i>S. goniocalix</i> , <i>S. stenotomum</i> ) and 7 tetraploid (good parents) increasing the nutritional quality in relation with program objectives with breeding population proposed by CIP.                                |
| Germplasm CIP            | H    | Merideth Bonierbale  | CIP         |       |                                 |               | 80        |                 |                   |                                      |                       |          | Exclusive research will be done by CIP.   |
| <b>TOTAL</b>             |      |  |             | 230   | 12                              | 97            | 239       | 42              | 137               | 164                                  | 45                    |          |   |

**Activity 3.1.2. Nutritional quality perspectives on potato analytical capacity:** Thomas Zum Felde (Table 1).

**Key accomplishments.** CIP has already standardized methods to analyze biofortification and other nutrients. These will be followed as detailed in the analysis.

**Decisions, challenges and moving forward:** Plant material that will be used by CIP is presented in table 1.

**Activity 3.2. Functional food activity:** Kubow and Kushalappa.

**Key accomplishments** The activities will be conducted as detailed in the project with minor changes.

**Decisions, challenges and moving forward:** In the project Kushalappa was expected to analyze 42 potato genotypes for functional food discovery based on LC-hybrid MS. The potato genotypes will be ready only in August (Rodríguez). A postdoc will be hired when the tubers are ready. Kubow was expected to analyze several genotypes for health benefits, but he now, considering the budget and time, decided to do only one genotype and a genotype from the advanced clones of UNC will be selected as the genotype from the indigenous communities are not yet available. **At this point Prof. Kubow proposed to modify the original methodology to measure Fe in blood and to measure Zn in nails of the children doing a controlled experiment. This will be carried out in Canada.**

### **THEME III: Potato breeding: Coordinators: Rodriguez, Mosquera, Kushalappa**

**Obj. 2:** Select potato cultivars, with high yield, late blight resistance, processing quality and community acceptance, for immediate release through indigenous community participatory research.

**Obj. 4:** Identify potato clones with broad genetic resistance based on metabolomics and molecular technologies.

**Obj. 7:** Establish public policy advocacy strategies for the incorporation of the results of the project.

The potato breeding research group in the Universidad Nacional has been informed regarding the project and other actors as, Fedepapa and National Potato Council

### **Milestones:**

**Activities 2.1, 2.2, 2.3.** Potato genotype multiplication and production quality analysis



**Key accomplishments:** Rodríguez has planted several genotypes in the Nariño experimental farm. Seed tubers of 12 advanced clones will be supplied to grow in greenhouse and to collect samples for metabolomics analysis (activity 4.1) and also for function food analysis (activity 3.2). The indigenous material will be produced by December. These tubers will be supplied to grow in greenhouse and to collect samples for metabolomics analysis (activity 4.1) and some for functional food analysis (activity 3.2). The CIP material will be grown in January 2013.

**Decisions, challenges and moving forward:** The potato genotypes for use by different researchers will be produced in Nariño experimental farm by Rodríguez. The genotypes planted for production of samples and seed tubers for further use in greenhouse production is included under each project the required samples from Rodríguez. Depending on the environment the samples or seed tubers for further research may or may not be available. This will be known only in August. The availability of genotypes and the number of tubers will be informed to researchers in August. Researchers are expected to factor this in their project planning.

**Activity 4.1. Metabolomics of late blight resistance:** Ajjamada Kushalappa.

**Key accomplishments:** One postdoc and a research assistant have been hired in March 2012. Because the tubers from Colombia are not yet available two genotypes from Canada is being used to standardize late blight disease severity assessment and metabolomics analysis. The resistant plant failed to show symptoms. Accordingly, surface 2mm deep needle wounds and higher concentrations of spores are being tried to develop a method to overcome specific resistance and to evaluate quantitative resistance.

**Decisions, challenges and moving forward:** The genotypes for metabolomics are produced in by Rodríguez (activity 2.1). The genotypes will be first multiplied in Nariño field and then planted in greenhouses in UNC, inoculated with pathogen, samples are collected and shipped to McGill for analysis. Also the greenhouse work is yet to start, but is expected to be ready by September-October. Thus, the samples are expected to arrive at McGill only in November or December. Meanwhile we are standardizing metabolomics protocol using Canadian tubers as detailed above.

**Activity 4.2. Molecular markers:** Mosquera, Tai, DeKoyer (presented by Deissy Juyó):

**Key accomplishments:** The activities will be executed as proposed.

**Decisions, challenges and moving forward:** The tubers will be produced in August and these will be used in the molecular analysis.

**THEME IV Community Education:** Coordinators: Sonia Navia, David Cuéllar and Andres Mosquera.

**Obj. 5:** To develop an educational program for the indigenous and poor smallholders in Nariño to introduce good agricultural and postharvest practices, including sustainable agricultural practices.

**Obj. 7:** Establish public policy advocacy strategies for the incorporation of the results of the project.

SENA Nariño branch and Universidad de Nariño have accepted to participate in ECAs.

**Key accomplishments:** The good agricultural practices will be based on literature. Literature is being collected to develop manuals for GAP. CIP has provided a manual, through Kushalappa, on the potato late blight disease forecasting systems to time fungicide applications to reduce number of applications. Certain parts of this are being incorporated into the manual.

**Decisions, challenges and moving forward:** The GAPs are based on the literature. Currently, there is no funding to test them under field conditions. Some of the good practices will be adapted to Nariño conditions and to create a demonstration plots. Following this we expect the communities to adopt. The communities trainers will be trained and they in turn will train the communities.

## **General presentations and suggestions**

### **Evaluation strategy**

The main document we have is our project with specific objectives and subprojects within. This should be linked to indicators, milestones and technology transfer. The steps in achieving these should be evaluated to measure the progress.

### **Scalability:**

The technologies developed here can be recommended to other indigenous communities that are not directly involved in the project, to other potato producers in Colombia, to other potato producers in Andean regions. CIP presents the net CIP Root, Tuber, Bananas that may be used to escalate project results to other regions and products different from potatoes. We must look to join efforts with other IDRC and CIP projects.

Fedepapa is supporting the socialization of the project. Nutritional quality tables will be adopted by ICBF at national level, pertinence of data from nutritional research in Nariño has been discussed with ICBF Nariño, agreements with local municipalities and SENA

Nariño ensures their commitment with ECAS, Universidad de Nariño (Udenar) is directly involved in research regarding environmental practices. We need to work harder for scalability at national and international level. We should present scientific articles in academic meetings. We should look for resources to organize a scientific meeting for Andean region.

How Canadians will profit from the relationship with Colombians through this project?

It is Canadian Government policy to help vulnerable communities, especially native communities. For IDRC it is mandatory to support activities looking for sustainable development in food and nutrition security. For CIDA it is mandatory to support activities in which Canadian experience contributes to solve world problems. This project is important for McGill University to exchange technology, generate new knowledge and to study new biological material. The work with indigenous communities is important to find new approaches to deal with indigenous problems in Canada. It is gratifying to help people to overcome health problems.

#### **Communication strategy - David Cuellar (Annex 2: 2.14)**

This strategy considers two target groups: Internal research team and Institutional Authorities (CIDA, CIFSRF, McGill, New Brunswick, UNC, Fundelcurso, CIP) and External communities, local authorities, National authorities, Scientific communities.

The web page (web site) is an important communication tool, it is a system. It is necessary to define responsibilities about it. The agreement with IDRC establishes conditions on communications. Any doubt will be solved by communications department at CIFSRF. They are willing to help in communication strategy. Any publication should be submitted to PIs Kush: previous to publication. It is suggested that communication tools are useful for scalability.

#### **Evaluation of the Inception Meeting (IM) - Teresa Mosquera and Ajjamada Kushalappa**

To evaluate we used the IM objectives as criteria. All participants found useful the IM to achieve the proposed objectives, especially, to improve relationships among Canadian and Colombian researchers and to fill gaps regarding internal deliverables.

Prof. L.P. Restrepo: There was an important contribution of Stan and Thomas to define the path and we will help to develop the component better and more thoroughly. We will use HPLC. For phenols and carotenoids, they suggest different protocols. Stan changed our vision and possibilities for analysis of diet and nutrition. It is better working with UHPLC, the work with NIRS takes too much time for standardization. Another achievement is for us to think farther, in the effects on the Community, as we are going to have an impact at the end with the project in the population.

Prof. Sara: Defining subprojects as components is a better approach to achieve research objectives and to understand cooperation among research groups. We were working with a fairly narrow vision, but after this meeting try to cross borders to reach the overall goal. The group on education advanced in building comprehensive strategies in the project and scalability.

Sonia Tinjacá: From genetic improvement point of view the discussions gave us the possibility to enrich our program with native potatoes. We find now how important is the nutritional component, but that we had a solid basis for developing new cultivars. It has been important to resume ties with CIP and opens interesting job opportunities.

Merideth: the meeting was a success; there was good interaction, problems appeared and they reached commitments with respect. It seems to me that communication missed during the preparation of the meeting on the thematic report; it arrived late and had not been prepared well. The idea of separating the groups and then bring together them was good.

Henry Corredor: It was easy to propose environmental assessment process. It is the first time I see that this happens. The project is important in environmental strategy.

Sonia Navia: The best of the project is its systematic approach. We have much ambition and need more financing to fully escalate results. We will be responsible for development of policies.

Professor Kush: It is possible to seek more funding for the ecology through IDRC component.

PhD student Clara Piñeros: IM was useful to overview the whole project. The expectations regarding impact on the population are amazing. I enriched because I now see how what is done in the lab may end up in the community.

Professor Kush: it was an enriching experience for students

Professor Helen Tai: I'm impressed with the organization, but there is still much work ahead. We have to give all the credit to Kush and Teresa by the project.

Andres Novoa: I expected to meet with a high-level technical group and I found a plus because of human quality. The issue of evaluation arouses negative expectations. In this group the subject had good reception because I saw that there is a legitimate interest in seeking the best for the project and for the objectives. I am happy with the work on indicators.

Feedback from officers

Renaud: the level of development of the vision common had an incredible work and relates them. I surprised work pleasantly as achieving a vision joint project with regard to

achievements, products and indicators. This is only the first step; we must continue working together to strengthen the indicators. I am impressed by the team. There are very strong in technical matters, open to other topics and also with a commitment with the project.

Kush: the structure is very important. Message to take home: if we do not stimulate their base of researchers, the research will not be good. Keep your students happy, discuss with them. Maintain the structure; all parties must be clear before you begin. Display your project.

Prof. Teresa: The challenge now is the implementation of the project. We must work together for that. Thank to everyone to support, collaboration, critics, to improve the general project.

### **Meeting in Pasto, Nariño. Auditorio Universidad de Nariño. Pasto. 2:00 pm. 18.05.12**

The agenda of the meeting in Nariño is attached (Annex 1). Some of the presentation, the PowerPoint slides are attached (Annex 3). This meeting was developed with communities, authorities and researchers, around 120 people attended the invitation to participate.

#### **Questions:**

Q. What mechanisms are used in the project to conserve native potatoes?

We will collect native materials, using Colombian legal protocols. We will clean the material, characterize it and give it back to the community and to the Colombian Germplasm Bank. We will identify community custodians of the resources and support them.

Q. How will you make compatible new clones with traditional practices of agriculture?

We do not change the farmer's ways to cultivate. We do not influence or we decide how potato should be handled, potato growers handle as they have done so. This ensures that does not change the Community way of doing things and they realize benefits of harvest. It is a process that is done with farmers, is one of the best learning experiences. Besides, we along with growers, make research to introduce Good Agricultural Practices. We invite communities to join us in saving genetic biodiversity.

Prof. Sara: new clones are important to compete. Improving family income is basic to food security and nutrition (FSN). Besides, to introduce it in daily diet is important.

Andres Mosquera: through ECAs participative work, the project is looking for the empowerment of the communities to make sustainable conservation of seeds.

**Educational program.** Sonia Navia (Annex 3) She loves the concept regarding that ECA is a *minga* of ideas. Each community selected in Carlosama, Guachucal, Pasto and Túquerres will develop two ECAs. It starts with an open call. Educational programs will be developed in agreement with communities according to participative diagnostics. Participatory research is a great motivator for grower's participation. We are always building future. She recalls that with growers, through ECAs, they have developed important potato materials. That is why the new clones in Colombia have Nariño related names.

**Comments on the project.** Prof. Jesús Castillo, Universidad de Nariño: Identify a vision and strategies of action for agricultural innovation. He presents a technological historical model. Recognizes that traditional science and technology, agricultural research and extension investments are not sufficient. He analyses problems of agriculture at the farm level. Low yields per unit of land. Lack of adoption of technologies, lack of financial resources, high levels of pollution, lack of organization of farmers with business vision. He presents a model of emerging development with an emphasis on technological innovation. Through the regional group in technology and agricultural production, is supporting the project to provide sustainable solutions.

**Comments on the project.** Luis Carlos Zambrano (SENA, regional Nariño): He presents some tips regarding learning methodologies and educational environments when working with adults. The idea is not working in dense meetings, by contrast in dynamic settings allowing learning without losing what is sought with the methodology. SENA will accompany the project through successful professionals and experienced. The recruitment of new staff will be taken into account. The Seine will be at the service of this project with the idea of sharing knowledge.

**General discussion.** Prof. David Cuéllar and Sara Del Castillo, moderators: They present methodology of this part of the meeting and invite to wide participation. Concepts will be registered and taken into account.

Jorge Robledo, Secretary of agriculture in the municipality of Pasto. He explains why the municipality is interested in support the Project with Fundelsurco. He says that education for the production, participatory research and new varieties are a part of the municipal development plan as well as the nutritional education. He highlights the importance for the community to make their own decisions. The objective is to develop an educational programme with indigenous and peasant communities through ECAs' methodology. The selection of participants should be based on potato grower's census. We do not talk about technological packages, rather about appropriate technologies. We are sending a communication to ICA and Corpoica to give us a few hectares in their experimental farm for the native seed bank. He compliments the group.

Jaime: vereda de Jurado Smallholder. 1. How can we avoid suffering consequences from low potato prices and high input prices? 2. Support from University of Nariño and Sena, has come to improve in potato production. 3. We want to get better yields with fewer chemicals.

Smallholder Vereda Quebrada Oscura, Túquerres. We need technical support.

Bolivar Chicausa, President of Pasto potato growers union. We need to introduce new varieties into potato market. This is the real test for new clones.

Guachucal smallholder. Inputs cost is high but potato prices are low.

Veronica Guerrero. Túquerres smallholder. For the municipality, it is rewarding to participate in this important project. Two suggestions. 1) Training. Importance of changing conventional production practices. Train farmers to conserve resources, the soil mainly as a driver of productive systems. Use of agrochemicals reduction. Protect water sources. 2). 30 months period is not enough time to generate a process of real change. We expect the results to impact on the potato production system.

Franco Gelpud. Alto Casanare's smallholder. Thanks to the Project, we want to participate.

Jurado smallholder. Acknowledgements. He was from the first ECA and the first installment of varieties. He thinks that programmes shall be devoted to the young men and the women, because they are withdrawing from the field. More training, it is important that people stay in the field. The field cannot be suppressed. The people are going to the illegal crops.

Carlosama smallholder. I salute Canadians, It is good to have them here since it seems that we are isolated, in Nariño begins Colombia. The impulse should be for children and grandchildren and future generation.

Cuaspu Carlosama smallholder: He thanked mayors and Sonia Navia. They have three months on the project. She congratulated the Canadians are here.

Municipio Túquerres vereda San Carlos, smallholder. He is grateful to different universities. Request more training in minimum tillage and organic fertilizers. The crop without chemical fertilizers is difficult, request training and research in organic farming. They have not gone red stripe products. There is high incidence of cancer of stomach by red stripe products.

Raul. Jurado smallholder. He thinks that training along with looking for better clones is a very nice idea. He congratulates Sena and Ecas for field training. He invites the students to the farms because research should be directly in field conditions. The important is to know the farms and work for the peasants.

Merardo, Carlosama smallholder. Thanks to these programs they are still learning to cultivate and market potatoes. They hope that institutions continue working with communities.

Carlosama smallholder. Thanks to entities, especially to Canadians. He thinks that training should be extended to other communities. Nutrition is important for children living quality. He suggests the creation of a Bank to start the new farmer that our country needs.

Prof. Sara: she says that everything that has been said by community members and local authorities in this meeting has been quite important. She summarizes and answers questions.

Guachucal smallholder. It must be positive thinking for the success of the project. Thanks to Canada.

Prof. David: he says that there are a number of points which are beyond what the project can do, however it must be borne in mind that many of the problems are solved with a community organized. ECAs may be used as a medium to organize ourselves to deal with the problems. Many problems can be addressed in this way through the organization.

Prof. Kush: Two years ago we started writing this project. We have met with several researchers and communities leaders. We have learnt a lot from them and included in the project what is best. With the help of the community, we can do a very good job.

Sonia Navia. She promises to invite three ECAs participants, the best three, to visit Canada in order to tell Canadians what we got with the Canadian support.

Prof. Teresa: It has been a very hard work, and we are going to make a great effort to give them the best and make this a success. Colombia is a strong country; all these ideas must be made a reality. We need to work altogether committed around ECAs and with a permanent dialogue.

Delphine: It is a pleasure to see the achievements that have occurred in this work with great effort. The exchange with communities is important. The project has a lot of potential for the world. Let's work to make visible the project and escalate results to other regions. A strong hug from Canada and hope that the project succeeds well.

### **Field visit**

The group went to Obonuco Experimental Farm for watching the essays of the phureja elite genotypes.

The group visited the industrial processing plant of Del Surco S.A and talked with the Jamondino community. The visit to Nariño was evaluated.





## ANNEXES

### ANNEX 1. The agenda of inception meeting

### ANNEX 2. Components presentations

- 2.1 Kushalappa-InceptionWorkshop.14.05.12
- 2.2 Renaud-CIFSRF-Bogota.14.05.12
- 2.3 Teresa Mosquera-Project Road Map.14.05.12
- 2.4 Sara Del Castillo-Food security and nutrition.14.05.12
- 2.5 Leonor Perilla-Family roles and gender.14.05.12
- 2.6 Ernesto Rodríguez-Participatory potato cultivars selection in plant breeding.14.05.12
- 2.7 Nutritional quality-Patricia Restrepo-14.05.12.
- 2.8 Resistance to late blight-genomics.Deissy-Teresa\_14.05.12
- 2.9 Metabolomics-Kush.14.05.12.
- 2.10 Fundelsurco presentation- Sonia Navia.14.05.12
- 2.11 Presentation Philip Oxhorn-14.05.12
- 2.12 Kubow Presentation functional food activity-14.05.12
- 2.13 Thomas Zum Felde (CIP) - Improving potato production in Colombia.14.05.12
- 2.14. David Cuéllar-Communication Strategy
- 2.15. Andrés Novoa- Monitoring and Evaluation
- 2.16. Henry Corredor- Environmental assessment

### ANNEX 3. Presentations in Nariño to communities and authorities

- 3.1. Overview presentation of the Project
- 3.2. Food Security and Nutrition
- 3.3. Analysis of the Project by ICBF

3.4. Potato breeding component

3.5. Educational program

ANNEX 4. Some activities developed during inception meeting