



**Sumaq mikhuna yuyayta qan wawaman**  
Good nutrition develops children's intelligence



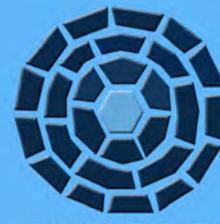
**Mikhunasninchiq ancha sumaq puni**  
Our meals are nutritious



**Purakmanta yanapanakuna**  
Let us support each other



**Nuñuchinchiq sumaq kausanapaq**  
We breastfeed to live well



**WORLD NEIGHBORS**

Inspiring people - Strengthening communities

**THE M<sup>C</sup> KNIGHT FOUNDATION**

# Action - Learning on Food Sovereignty and Nutrition in Communities of northern Potosí

Research and Development Approach with Participatory Methods

Northern Potosí, BOLIVIA 2014

# Project Systematization: Implementation of a Learning-Action process on Food Sovereignty and Nutrition for marginal rural areas in the central Andes of Bolivia

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*The knowledge expressed in this document belongs to the stakeholders of the process, that is, to the participants of five communities and the World Neighbor team.*

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# Presentation

The document that we have in our hands is a beautiful example of a development project summary that carefully documents, reflects, learns, tests new things, makes improvements to what was unproductive, and consolidates what does work while it progresses. The content is clear, precise and detailed regarding the approach used and the results obtained. Its approach combines severity with creativity, science with artistic, sensitivity to culture and the urgency of improving the quality of food and nutrition. The document is a testament to the project's respect for the inhabitants and their families who are motivated to try innovations that the inhabitants themselves and their families suggest and choose. It is a worthy example of valuing tradition while promoting changes based on the culture for the benefit of all. The design is beautiful, masterfully incorporating photos and drawings of families, and in doing so it reinforces the message of the importance of the visual and of the participatory nature of their work. The document is highly educational for those who would like to replicate the approach used in the project.

In its initial version (2005-2008), the project began with an almost exclusive focus on food availability in communities of Northern Potosí. Specifically, it wanted to improve the food security of communities by introducing legumes. It was expected to regenerate and increase soil fertility through nitrogen fixation, increasing crop yields in general. Moreover, it was expected to improve the availability of highly nutritious foods based on legumes. The agronomy would be combined with nutritional education, diffusion, disclosure and capacity building to incorporate nutritious foods in the family diet. Agriculture was a well-known topic for the project technicians. Nutrition was a completely new topic.

The project established over 200 trials in 36 communities with varieties of beans, peas, frijol and tarwi, as well as alfalfa, oats and barley for forage. Similarly, it implemented 8 trials on green manures that included tarwi and other legumes. It also included the collection of anthropometric data of children twice a year, and visiting families in order to apply the previous twenty-four hour food intake recall method in 30 communities. Starting in the second year of that period, it launched a campaign to promote better nutrition by encouraging mothers to try and adopt legume-based recipes. The experimental approach was specifically addressed to women. It bet that farmers would incorporate legumes in their production systems without any problem once their benefits in agronomic trials were established. It also assumed that increased food availability would necessarily translate into nutritional improvement. None of these assumptions was confirmed.

Eventually, the Project contributed very little to improving farming production and/or child nutrition in the area. In retrospect, it could have been more successful if it had adopted a less vertical approach and taken into account the local knowledge about the native legume varieties as well as the local factors behind good and poor infant feeding. Of course, it is easier to say what should have been done to make appropriate decisions when necessary. In this context, two quotes from Edison are relevant. First, "just because something did not achieve what you had planned does not mean it would have been useless". Second, and paraphrasing, the project did not fail but eventually found 10,000 ways that do not work." In short, the innovations described in detail herein certainly could not have been implemented without the mistakes of these years and the energetic and honest reflection about the ways of correcting them. Making mistakes has a high ethical value. The Project recognized and embraced those mistakes and learned from them.

In 2008, under new management, the project began a systematic, sometimes painful but always brave, honest and creative process of reconsideration and redesigning of its approach and priorities given the reality of limited improvements to child nutrition to which it had contributed. To start, it took very seriously local study's findings on child malnutrition and its causes and began to build on these findings. One of them indicated that "with this research we could see that nutritional deficiencies often begin when the mother starts breastfeeding and when complementary feeding was first introduced. The interventions aimed at improving mother and child nutrition will require changing in parental behavior, greater recognition and community support to the importance of

child feeding and the inclusion of strategies (...) to incorporate men and to make high quality nutrition more widely available in communities.”<sup>1</sup>

The project incorporated a highly participatory action-learning approach which gradually solidified and implemented a new strategy to improve nutrition. By beginning a redesign process, there was an obligation to resist the pressure to (mechanically) adopt strategies proven worldwide. Rather, it proposed starting from a critical analysis of the specific project context and, particularly, reflecting on what did work and what did not. This involved an analysis, questioning and operational reinterpretation of the study findings carried out locally. From this introspection and reflection emerged a strategy to promote four priorities, namely: Family Support, Diet Diversity, Breastfeeding and Complementary Feeding. These priorities were expressed in a concise set of messages and clear, practical and feasible approaches based on an understanding of local perceptions and barriers and opportunities for behavior change.

Studies in the communities where the project worked revealed that the barriers for the mothers to improve their feeding practices had to do with the fact that they “felt alone in their efforts to care for the child, noticed the absence and lack of interest of their husbands and therefore were not inspired to make changes.” This project also discovered that mothers equally encountered resistance to change from their mothers-in-law. The great challenge was how to go beyond identifying obstacles (husbands, mothers-in-law) and to manage changes in such a way that would enhance internal family solidarity.

Instead of following the approach of nutrition projects focused exclusively on mothers as the axes of change, the project worked with the whole family. Education on nutrition was given to mothers and fathers even to mothers-in-law. The results of the education were measured not only in terms of changes in knowledge and mothers’ practices but of the changes seen in the whole family. In each community, the participants chose and organized native, nutritious and ancestral food days. Mothers, fathers, children, and grandparents participated in these food days.

Dialogue with families showed that nutrition is based on much more than the mere availability of food, or even a little information and reflection at community level about nutrients of animal and vegetable origin. This undoubtedly is related to the fact that families do not understand the effect of feeding in newborns and young children and the nutritional composition of meals, that is, the importance of diversified consumption of energy, protein, micronutrients and fat sources. At the same time, as mentioned above, nutrition is related to the lack of responsibility of the household as a whole with respect to nutrition as well as to the pressure of mothers’ daily work, especially in the agricultural season in times when there is much work to do. Mothers have limited time to take care for their children. “Sometimes we cannot give to our wawas the frequency and variety of food recommended because as mothers (women), we have to herd, help in planting, harvesting and cooking; therefore, we feed them with what we have and when we have time off.” Pressure rises in proportion to family size and the number of children cared for. That is why mothers do not breastfeed their babies enough, or provide limited care or diet diversity to adequately feed infant and children. Also, due to time, they prefer meals such as noodles, rice or potato/chuño, which are fast to prepare, and last for the day, leaving more time to assist in farming labors or to rest.

Nutrition is also influenced by the lack of land for crop diversification among families of young couples; the increasing distance of grazing lands versus areas of crop production, distance to markets, health centers or other altitudinal areas producing complementary foodstuffs; and the facility to process food before consumption (e.g. Water scarcity or flooding to remove the lupin alkaloids) Nutrition is even linked to climate change; the increase in temperature no longer permits making chuño, which means it cannot be stored, even though it is essential for families to survive in times of scarcity. Now, they eat less chuño or supplement it with noodles and rice. All these conditions influence decisions about the content, quality and use of nutritional food.

Finally, nutrition is related to local definitions of food and feeding practices, and the valuing (or discrediting) of traditional and new foods. This covers the perception of food benefits from

<sup>1</sup> Cruz, Y., Jones, A., Berti, P. Larrea, S., 2010. Breastfeeding, complementary dietary and child malnutrition in the Andes of Bolivia. Latin-A-merican Nutrition Records, Vol. 60 N° 1.

colostrum to potatoes, meat and fat, noodles, vegetables, fruits and cookies. It also covers the acceptance of hunger as an inevitable part of smallholder farmers' lives, based on the current situation but also the ones that took place not so long ago when escaping from the pongueaje (compulsory unpaid domestic service) abuse. Mothers know that tarwi and quinoa products are highly nutritious, but they are uncertain of it, especially when they compare their food to the urban food that they suppose is better, often under the aura of modernity and at other times with the open or veiled encouragement of commercial advertisements.

Today, due to the project, there is greater diversity in the diets. The consumption of legumes is still insufficient but families eat more vegetables with vitamin A and, even more surprising, meat, animal fat and oils. In the family, as indicated in the manual, "the mothers, fathers, grandparents perceive that good nutrition through various foods contribute to "Yuyay" or cognitive development, to discern with wisdom the life and destiny of the community, to "kawsay" which is the possibility to live longer and not get sick, and to "kallpa," which means to have strength to live and work in the environmental conditions of the area. Moreover, spouses think they should support their wives in concrete tasks of feeding their children; it is not enough to produce or buy just any food for them but rather the most nutritious ones, and that newborns and babies have to follow a nutritious diet especially based on breastfeeding and complementary feeding at appropriate times.

None of this success is necessarily "sustainable." Sustainability is not something reached after a long path, but rather where one is guaranteeing some results. Sustainability exists only as an unstable equilibrium. It means new challenges, testing innovations and certainly, making new mistakes until the solution is viable ... for the moment, under conditions which are always changing.

I dare say that the success of the project is the result of a mixture of many factors. These include a deep commitment to achieve results that benefit people; a detailed understanding of malnutrition causes in the area; curiosity, eagerness to learn, document and improve; and a strong ability and willingness for self-criticism and innovation. It also includes care and respect for what people say, think and value; tact to agree with communities to change what is feasible; pragmatism to seek solutions where one can find them. Finally, it expresses great confidence and affection to make sure that mothers, families and communities can improve their conditions. All this translates into a bold and honest document from which we hope that many other projects and farming communities can learn lessons and important guidelines.

**Carlos A. Pérez**  
**Scientific Coordinator**  
**CCRP in the Andean zone**  
**The McKnight Foundation**



# Preamble

The “Implementation of an Action-Learning process on food sovereignty and nutrition for marginal rural zones of the Central Andes of Bolivia” Project, funded by the McKnight Foundation and executed by World Neighbors Bolivia involved the active participation of mothers, fathers, and grandparents of 103 families in 5 communities of Northern Potosí, from March 2010 to October 2013. The proposed research and development process used local knowledge as a starting point, so interventions were designed not only from an institutional point of view. The project consisted of the implementation of an Action-Learning process on food sovereignty and nutrition based on four thematic topics aimed at improving family and child nutrition, a process that united distinct types of knowledge in order to build the learning collectively.

The planning framework of the project implemented several tools, such as a research and development protocol, as well as a theory of change where the themes, actions, methods, indicators of evaluation, objectives and goal are described. All of these are oriented to improving family practices in the four thematic topics mentioned: **Family support (DS)**, **Diet Diversity (DD)**, **Breastfeeding (BF)** and **Complementary Feeding (CF)** whose combined effects would contribute to improve family and child nutrition in the long term. Similarly the project aimed to contribute to nutritional interventions in rural areas with agriculture and nutrition components by using participatory methods.

The thematic topic of Diet Diversity, its name in Quechua “*Mikhunas ninchiqancha sumaq puni - Our meals are nutritious*” was developed between April and November 2011. The segment seeks to share experiences and learning about the process of promoting local products as a source of nutritional diversity in family foods, focused on foods containing grains, tubers, vegetables and fat sources as an essential condition for improved nutrition for children under the age of five, in the context of Northern Potosí.

The thematic topic of **Family support** is described in segment two “*Puraqmanta yanapanakuna- We support each other*”, implemented between February and May 2012, period in which experiences and learning are shared when addressing the issue of the roles and the mutual support within the family, through participatory methods that generated reflection and promoted best practices for feeding children with the support of all the family members.



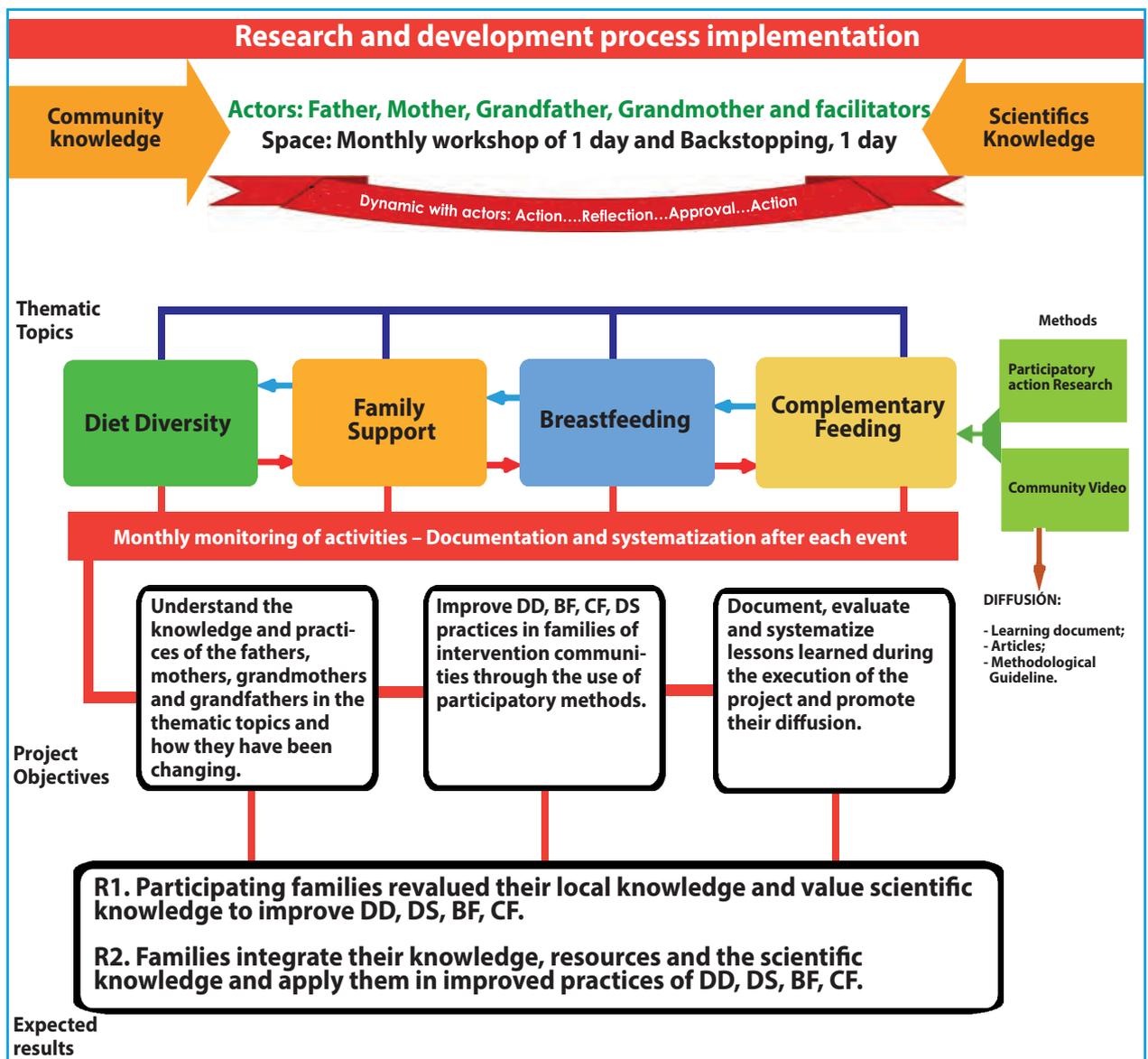
The third segment addressed the thematic topic of Breastfeeding, titled “*Nuñuchinchiq sumaj kawsananpaq- We breastfeed to live well*”, which was put into practice during the period of May to August 2012, having shared a set of experiences and learning resulting from the promotion of breastfeeding through participatory methods that resulted in better breastfeeding practices: the immediate newborn breastfeeding, exclusive breastfeeding until at least six months and prolonged breastfeeding of up to two years or more.

Finally, the fourth segment called “*Sumaj Mikhunay uyayta qon wawaman- Good nutrition develops children’s intelligence*”, corresponding to the systematization of the thematic topic Complementary Feeding, executed during the months from September 2012 to April 2013. This area seeks to share experiences and learning in the promotion of Complementary Feeding through participatory methods that contribute to generate knowledge and to apply best practices in feeding to children over six months of age with consistent and nutritious meals, using both community food and those brought from outside through purchase or exchange.

In this publication and for each thematic topic, we begin with the background and conceptual framework. Then, we present the process itself, tying the findings to data from the relevant literature, the results achieved and, finally, the conclusions and learning of each segment.

The reader is invited to analyze and reflect on the information in this document that seeks to influence various actors or operators in rural development so that they learn about and take into account the varying conditions of life in communities, their resources and potential to adopt contextualized practices in the implementation of their projects.

Figure N° 1. Diagram of the research and development process implementation



# I ntroduction

The “Action-Learning on Food Sovereignty and Nutrition in marginal rural zones of the Central Andes of Bolivia” Project began operations in October 2009, when the World Neighbors Bolivia team concluded a research process that, among other themes, inquired about the barriers<sup>1</sup> that mothers of Northern Potosi face to feed and properly care their young children. The main challenges of this stage were: starting from the basis of local knowledge, generate a dialogue between local wisdom and scientific knowledge, include men in the child nutrition project and generate greater trust with the families, the results of which can then be used to improve the practices of the four thematic topics to be addressed. From this point, in January 2010, the World Neighbors team strengthened the working approach “Development from people” on the basis of a community assessment and implemented the project with the use of participatory methods such as Participatory Action Research (PAR), Participatory Processes Visualization (PPV) – often considered part of PAR – and the Community Video.<sup>2</sup>

In the initial phase of the project, the World Neighbors team had the support of experts on these participatory methods. They also received support from the McKnight Foundation, the funding entity, through its Collaborative Crop Research Program (CCRP) for the Andean area. From May 2010 onwards, community assessments were performed using PAR, PPV and CV for the first time, which resulted in recommendations to establish the project thematic topics: improving crops, recovering weavings, rescuing local foods, recovering earthenware and increasing the diversity of meals. With respect to the set of issues, it was agreed with the communities, to start with the recovery of



“ancestral” nutritious meals to improve family nutrition, while it was reflected on that nutritious local foods were being replaced by processed products of low nutritional value, such as rice, noodles, cookies and white bread, among others. The hypothesis raised was that if at least families could return to consuming their nutritious local products, such as wheat, fava beans, peas or quinoa and others, the family diet, especially for children, would improve.

Thus, the 2011 program began with the strategy of “Native Food Days.” In the five communities, interested families met and prepared meals with local ingredients; at the same time, that process was reflected and documented with the Community Video. During this time of process activities, the World Neighbors team was improving its intervention strategy and learning more about participatory methods. For these reasons, their actions were aimed at four thematic topics: Diet Diversity, Family support, Breastfeeding and Complementary Feeding.

In 2012 and 2013, the activities were based on the experiences of previous programs, generating important learning on the use of participatory methods and their effect on family and child feeding, starting the systematization of processes and implemented methods.

<sup>1</sup> According to Andrew Jones, these barriers have to do with the availability of time and workload of women, their level of education and health, maternal ability, their dynamics of family power and gender divisions; these are factors that are strongly influenced by cultural rules. Jones, A. 2011. Overcoming barriers to improving infant and young child feeding practices in the Bolivian Andes: The role of agriculture and rural livelihoods. Ph.D. Thesis. Ithaca, Cornell University. 287 p.

<sup>2</sup> Timmi Tillman, Maruja Salas and Maja Tillman.

## Why working in nutrition?

Food is an essential part of the lives of individuals, peoples, and nations; within that framework, nutrition – along with food sovereignty – is a growing concern worldwide. According to the Pan American Health Organization, women in poor areas of Latin America begin pregnancy with a deteriorated nutritional status, which often worsens as nutritional demands are not met. As a result, intrauterine growth delays have become broadly generalized. Infants and young children have high rates of nutritional deficiency. They are susceptible to infection and require special care and time-consuming resources. It is believed that this is due to the limited access to an adequate quantity and quality of food, sanitation and health care. In many situations, these deficiencies are made worse by improper care and feeding practices at home. As result, a large proportion of infants and young children suffer from protein-energy malnutrition and micronutrient deficiencies such as iron, vitamin A and zinc. Moreover, UNICEF says: “Proper nutrition is a powerful benefit; children who are well nourished have more possibilities to be healthy, productive and able to learn. Malnutrition, per the same logic, is devastating. It paralyzes the intellect, undermines productivity and perpetuates poverty for any family or society living it”.<sup>3</sup>

The learning of development interventions in food programs has established the importance of adequate nutrition during the early stages of life, in women during pregnancy and breastfeeding, in their infants and young children. The globally recognized practices of Breastfeeding and Complementary Feeding are considered direct and effective strategies for preventing childhood malnutrition, as there is scientific evidence of the relationship between exclusive breastfeeding and significant reductions in the incidence of diarrheal disease, respiratory infections and mortality. Within the Bolivian context, it has been established that good nutrition depends not only on food intake but intervening external factors (political, economic, social, cultural, environmental) and internal factors (sex, age, size, physiological state of women, parents’ education) interacting in the collective and individual environment of people.<sup>4</sup>

Following a people-focused, community based development approach, World Neighbors began in 2010 a dialogue with families of the five communities of the project (Northern Potosí) on the paths towards “living well”. Important reflections have resulted from this process from mothers, fathers, grandparents, and the facilitator team, one being that one should “eat well to live well.” This is supported by the communities’ ancient Aymara - Quechua heritage that includes valuable practices such as nutrition based on local products, organization systems based on equality and mutual support (Ayni), management of technology and weather forecasts, medicines based on local plants and other values and practices worthy of recovery. This, together with the reflection of the World Neighbors team on results from previous projects and their experiences with more quantitative methodological approaches as well as the reactions of participants in past years, made us decide to work on only four thematic topics: i) Diet Diversity (DD), ii) Family support (FS), iii) Breastfeeding (BF) and iv) Complementary Feeding (CF). It was felt that these thematic topics, implemented through participatory methods, could ensure a better learning experience and action to participants of the process, contributing to food sovereignty of families and good nutrition for their members, especially children under five. At the same time, the four thematic topics chosen according to previous World Neighbors’ studies of the area, responded to the most critical limitations in child nutrition, specifically deficiencies of iron, zinc, vitamin A and fat sources.



<sup>3</sup> [www.unicef.org/esaro/5479\\_nutrition.html](http://www.unicef.org/esaro/5479_nutrition.html)

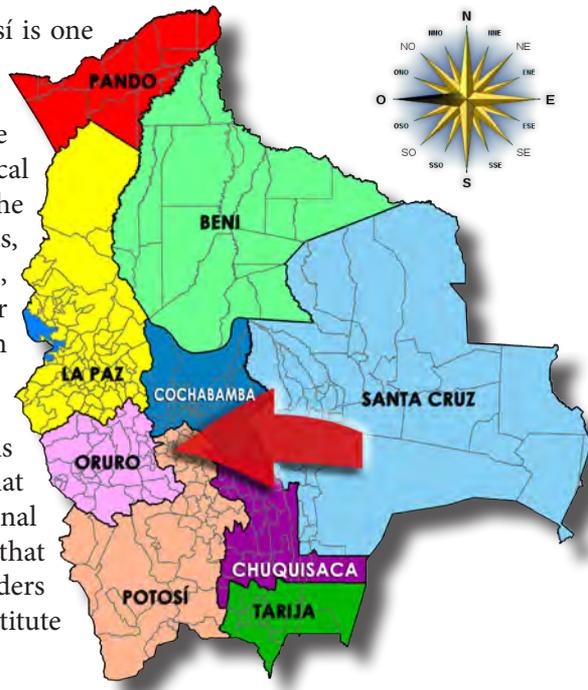
<sup>4</sup> The Bolivian Ministry of Health and Sports. Technical Document “Recommendations of energy and nutrients for the Bolivian population,” 2007.

## Context in which the Project was developed

The project was developed in Northern Potosí<sup>5</sup>, specifically in the communities of Camacachi, Alta Ticanoma 1 and Chacoma (located in the Municipality of Sacaca); Cayastía and Lancaya (located in the municipality of San Pedro de Buena Vista).

Since ancient times the Quechua and Aymara cultures have lived side-by-side in these communities, although their origins are different. There are two types of organizations; on the one hand, the oldest culture, the *ayllu*, with several communities in its territory; on the other, the central and sub-central smallholder farmers. The main family activity is farming and animal husbandry at an altitude between 2800-4500 meters above sea level; the main crops are potatoes, barley, wheat, and depending on the ecological level, quinoa, tarwi, vegetables, fruit and corn. They are very religious people who maintain ancient rituals and religious festivals that syncretize the Christian calendar with farming and ranching activities<sup>6</sup>. For families, the community is not just the physical place where you live, but rather a strong bond that exists between each person. Both men and women know how and make amazingly creative multi-colored weavings.

According to national statistics, the Northern Potosí is one of the poorest regions of Bolivia, where the poverty incidence exceeds 80%. It is argued that families do not have enough income to cover their food basket<sup>7</sup>. The present research process has not focused on the statistical “poverty” of people, but rather considers them to be the owners of resources and values of their medicinal plants, foods of high durability such as chuño and dried grains, dignifying practices such as AYNI, their respect for nature, full integration into community affairs in which participation is considered valuable, and the freedom with which they work in their community. This approach is inspired by the concepts that Amartya Sen raises in his book *Development and Freedom* (2000) which states that freedom is the primary end of economic, social and personal development, in addition to being the principal means that the person has in order to get what he or she considers valuable. Economic income does not, in and of itself, constitute the (sole) purpose of individuals.



**Table N°. Family Participation in the process**

Community	Total number of families in the community	Number of families participating on a permanent basis	Number of participating families with children under 5 years old
Alta Ticanoma 1	18	12	9
Chacoma	30	24	13
Camacachi	45	23	21
Lancaya	25	21	14
Cayastía	230	23	23
<b>Total</b>	<b>148</b>	<b>103</b>	<b>80</b>

<sup>5</sup> Northern Potosí is located in the Bolivian Andes and runs through Bolivia from Northwest to Southeast, forming two mountain ranges between which lies the highland, a plateau of an average height of 4000 meters above sea level, a mineral-rich area.

<sup>6</sup> This worldview focuses on the “super” humans, where the achachilas, hills, God of life, human being always male and female, nature and the Pachamama exist. The “runa” is the person related to God through ceremonies, ritual and celebrations (Esterman J. 1998 p237; Andean Philosophy. Native wisdom for a new world. La Paz: SEAT.

<sup>7</sup> Economic and Social Policy Analysis Unit 2009, Ministry of Planning and Development. Bolivia.

## The Project Implementation Methodology

The spaces and means of implementation of the project were mainly the **workshop and accompaniment**. Community workshops of approximately four hours were conducted once a month in each community, on days when participants had time. For each workshop, there was a methodological framework that established times, activities, goals, techniques, degree of dynamism, materials and responsible for each session. (See Annex 3). Participatory tools used consisted of work in groups of three to four people, or plenary sessions or collective dialog, mainly amongst mothers, fathers, grandmothers and grandfathers. The role of the facilitators was aimed at knowledge building, learning and action, through the following actions:

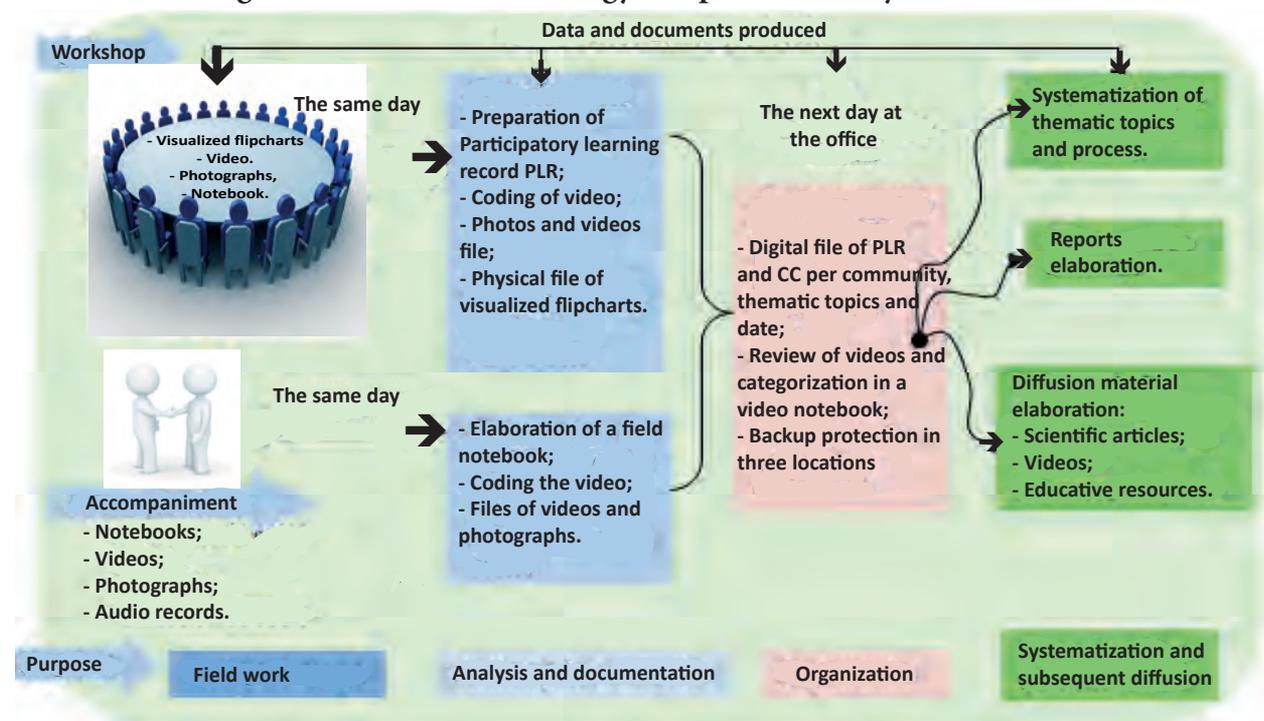
- Generating a dialogue of knowledge between local wisdom and scientific knowledge. After sharing local wisdom and reflecting on it, and usually through initiative of the participants, the WN team shared and deepened the scientific knowledge in each thematic area as appropriate.
- Using participatory techniques to promote the consolidation of new knowledge in participants. Encouraging reflection, retelling of information, conceptual analysis, connections and application of their own knowledge through challenging questions.
- Using the PAR techniques and visualization by participants to present their progress in plenary sessions. Promoting the exchange of questions amongst them.
- Audiovisual registration of workshops and activities by the participants themselves.

All workshops began by sharing coca leaves (pijcheo) with adults and fruits with children, and ended with a diversified snack of potato, chuño and vegetables, thanks to contributions from the community and institution.

At the end of the day of the workshop in the community, the team analyzed what had happened, looking for new strategies, making adjustments when they were needed and documenting the learning in the Participatory Learning Record (PLR, see Appendix 4).

Family accompaniment took place the day after the workshop and consisted of each facilitator accompanying a family on a daily agricultural work helping in what it was planned. In this time, researchers observed, dialogued, reinforced messages and documented aspects related to the study. After the accompaniment day, the team performed the analysis and reflection on learning, recording it in the field notebook (See Annex 5).

**Figure N° 2. Collection strategy and process data systematization**



The project documentation is based on the flipcharts (large sheets of paper) used in the workshops, mind maps, photographs, community videos and others.

## Participatory Methods<sup>8</sup>

The Participatory Action Research (PAR), Community Video (CV) and Participatory Programs Visualization (PPV) methods were used. With these methods that participants recognized as friendly, the whole process of action learning was performed, using a variety of participatory techniques (drawings, concept maps, cards, dynamics, and others) and the research questions, which promoted dialogue and reflection to identify endogenous and exogenous factors that complicate and facilitate the four thematic topics aimed at improving child and family nutrition.<sup>9</sup>

All the visualization work of the group dialogues was executed using PAR and PPV, with the goal of recovering local knowledge and capturing it on flip charts, cards, drawings, maps and other method techniques, which in addition, further facilitated reflection in plenary sessions regarding the documentation of the experience, the products and the process itself. This method was accepted and used quite easily by the diverse participants: mothers, fathers, grandparents, grandmothers and youths.



## What is the Participatory Action Research method?

The PAR method is a methodological approach that sets the challenge of building knowledge with the stakeholders, recognizing that there are imbalances of power that must be balanced (Salas and Tillmann, 2010). It also facilitates the establishment of a learning space in which there can be a dialogue between popular wisdom and scientific knowledge based on the ethical premise that both are valid and worthwhile. This is a methodology that can help not only in the transformation of material conditions but can also generate a process in which people collectively transform. This involves joining research time with action, seeking out and provoking the participation of subjects involved in some or all phases of the research, as well as to “rescuing” the validity of popular local knowledge and abilities, resulting from interaction with others, with the environment and with their own local culture as well as that of World Neighbors’ institutional culture.

In this sense, the PAR and PPV methodologies allowed the participants to journey through the following scenarios:

- Moving from object to subject;
- Linking knowledge and action as a dialectical relationship;
- Using techniques adapted to pluralism and to solving problems;
- Linking scientific and local knowledge;



<sup>8</sup> For more information on the methods used in this study, please refer to the “Methodological Guide”

<sup>9</sup> Participatory methods correspond to action research because they emphasize field work aimed at understanding the individual and collective point of view on family support through an analysis of what happens in real life, compared to what happened before (grandparents’ time) within the family (cf. Malinowsky et al: 2001).

- Working on the multidirectional communication models; and
- Moving individual subjects to the level of collective subjects.

One PAR characteristic is that it does not prioritize the purpose nor does it assume a priori the research elements; the why, how and with whom, are being redefined along with the process itself, so the process and research are inseparable.

## What is the Community Video?

The CV is a powerful tool to document people's experiences, their needs and expectations, as seen from their own perspective. It assumes that those who are living problems are the ones best placed to understand their limitations and opportunities. The videos are, by essence, the way to present the "internal perspective of communities," a lively and accessible manner for different types of people and audiences.<sup>10</sup>

With the Community Video, we managed to achieve at least two essential purposes in the process; first the transmission and diffusion of good practices related to better nutrition; and second, to reflect and document the process of accompanying the families.

The Community Video was an excellent tool for the "Native Food Days" because, by this means, it was possible to record the preparation of meals and the feeling *ipso facto* that this provoked in the participants; these videos were displayed at the end of the activity and, in the group setting, participants reflected and commented on them, as well as proposing actions that would make it possible to recover these foods in the future, which not only motivated families but also committed them to that goal. In the Diet Diversity topic, research on breastfeeding practices and preparing nutritious mixes for Complementary Feeding allowed us to learn and enhance the great capacity of the participants to capture on video the prep work, with men and women in action, the dialogue and content of workshops, as well as the testimonies and accompaniment that enhance the work process. The incorporation of local music and audio using a traditional language enriched the content of the video.



<sup>10</sup> Nick and Chris Lurch 2006; In the CV, participants make use of equipment (flip camera, camera) and within the framework of a collective consensus it is decided what and how to shoot, as well as approving or cutting images to create the final video footage during the participatory video editing session.



Segment N° 1

**DIET DIVERSITY**

***MIKHUNASNINGHIQ ANCHA SUMAQ PUNI***  
**OUR FOODS ARE NUTRITIOUS**

## Background

In recent years, the potato has been the main product sown in communities, besides being the main crop for rotation of other crops, such as wheat, rye, barley (which families called “grain”), fava beans, peas, among the most representative. However, family meals are prepared based primarily on potato, chuño and other food bought from outside such as noodles and rice.

Similarly, in recent years it was found that families have been setting aside some of their more nutritious traditional meals. This is due to the appearance of new food products, the crop displacement of certain products due to environmental factors or pests as in the case of quinoa, or change of use as in the case of the barley grain destined now for pigs and/or dogs and the preference for softer products like wheat or noodles that are easier to prepare.

### Factors identified by the communities that cause displacement of the barley (*Hordeum vulgare*) in the family diet:

- The appearance of wheat (*Triticum aestivum*) and rye (*Secale cereale*) led to the displacement of barley because the flour of these grains is easier to prepare;
- The climatic variation, particularly temperature, enabled the emergence and better yields in crops such as potatoes that captured all the family attention due to their positive qualities;
- Its rough texture versus other soft foods, such as wheat and noodles, that are also easier to prepare;
- Yield in barley production has decreased due to a perceived reduction in soil fertility, probably due to the effects of agrochemical use;
- Difficulties for the mother in sifting barley;
- Some family members no longer like the meals with barley because they prefer meals with better-tasting noodles and rice,;
- For some people, barley preparations are simply not visually palatable, due to its dark coloring.

### These factors led three out of five communities to use the grain less frequently in their meals<sup>1</sup>

According to parents, in development projects implemented in their communities, the nutritional value of their products and meals has not been discussed or thought about, compared to other products that were introduced from outside and that have taken over the family diet. This reveals a lack of information and consequently the absence of collective reflection on the importance of nutrition for the family and for children under five with meals based on local products and foods.

Furthermore, diet diversity has immediate effects on the proper feeding of children who are starting Complementary Feeding and are in a growth phase as well as adults who face great physical weariness.

For its nutritional properties and specific deficiencies in the area, local products and “ancestral” community meals may be promising to provide good family and child nutrition. A good reading on potential and linkage to local culture can motivate families to recover their foods and even crops that were displaced.

From the nutritional point of view, it is possible to combine these foods and prepare nutritious meals, because the available local products have important nutritional values, which are also part of the traditional food of the communities.

<sup>1</sup> Testimony of participants in workshops organized by World Neighbors and recorded in Field Notebooks 2010, Video Sumaq Mikhuna 2011; Participatory Learning Records 2012.

**Table N° 2. Nutritional Value of some meals and products consumed in the communities**

Product	Nutritional Value					Foods
	Proteins	Calcium	Iron	Fat	Others	
<b>Pelled wheat</b>	10,2 mg	53,0 mg	13,0 mg	1,3 mg	-	<i>Llusp'ichi</i>
<b>Ground maize</b>	8,59 mg	9,0 mg	4,2 mg	4,26 mg	-	<i>Sara lawa</i>
<b>Chuño (dehydrated potato)</b>	3,49 mg	16,0 mg	5,7 mg	-	-	<i>Ph'uti</i>
<b>Native potato</b>	2,14 mg	4,0 mg	1,5 mg	-	Vitamina C 14, mg	<i>Wathia</i>
<b>Okoruro (Andean watercress)</b>	-	-	1,05 mg	-	Zinc 0,45 mg	<i>Okhoruro soup</i>
<b>Quinoa</b>	2,97 mg	26,0 mg	2,6 mg	2,45 mg	-	<i>Phisara</i>
<b>Whole barley</b>	11,8 mg	54,0 mg	5,8 mg	1,12 mg	-	<i>Chapu</i>

Source: Bolivian Food Table 2010

In the municipalities of Northern Potosi, 75% of households showed evidence of chronic and high-risk vulnerability to food insecurity (2006), with fragile strategies and assets for facing the events that affect their food security and their children's.

In this context, the need to work on the Diet Diversity thematic topic has become evident because greater food variety is assumed to mean better quality eating and superior nutrition. For this reason, the project promoted meals that included at least grains, tubers, vegetables and fat. To achieve this, the project asked participants to reflect on their ancestral meals and what their families now consumed, and at the same time, performed an analysis of crops, food available according to the agricultural calendar and food intake, using the Participatory Foods Frequency technique, among others.

## Conceptual framework

In Northern Potosi, it is estimated that 88% of households are mainly engaged in agricultural activity through the cultivation of tubers and cereals and sheep ranching and they have been listed as subsistence producers; that is, they have little land and essentially consume what they produce. They live with scarce natural, physical and human assets. Approximately 68% of households are required to perform two or more activities to generate income. At the same time, in these same communities, chronic malnutrition in children 12 to 23 months is estimated at 44.4%, compared to a national average of 23.2%.<sup>2</sup>

In the five communities where WN works, the most important foods produced are: potatoes, corn, barley, rye and wheat. The availability of these foods, combined with others that families buy from local markets or cities, can give the impression that families have a varied diet, but consumption is monotonous and poor food diversity and variety is observed. This corroborates the theory that production of various crops is not in itself a guarantee of better nutrition.<sup>3</sup>

In these and other communities of the region, Peter Berti (HealthBridge, Canada) conducted the study on "Evaluation and Characterization of Family Diets" in 2010, finding that the potato is the main base of the family diet; it was found that consumption of animal fat was very low, implying a risk for children's lives that, in the short term, can cause deficient energy levels and, in the medium term, could generate alterations in neuro-cognitive development.<sup>4</sup> In communities, one can observe a consumption pattern that favors plant foods; in that sense, sheep meat is not a permanent food, while fat and vegetables are available when purchasing from local markets.

2 National Survey S.A.N.-PMA-DRIPAD/MDRT and MA 2006 & Baseline PDC/MSD.2007.

3 Scurra, M; Yanapai Group, their statistical study found no evidence to link agricultural biodiversity to food security of families in Huancavelica, Peru; 2011.

4 Berti, P. Assessment and Characterization of the Diet of an Isolated Population in the Bolivian Andes. American Journal of Human Biology. 2010.

## Statements of the families on the essential reasons for the consumption of potatoes <sup>5</sup> (*solanum tuberosum*)

- It is raw material to make chuño, which serves as a food reserve throughout the year when there is a lack of fresh food;
- Local weather conditions favor the cultivation of the potato;
- It is a primary food, which is used in all meals;
- It can be eaten with only salt;
- It is commercial, meaning it can generate income to buy other foods;
- A potato meal offers volume and consistency; one can offer it to guests;
- Easy to prepare and carry;
- It is soft and offers great support as a starter food for breastfeeding infants;
- It is an indicator of abundance and family welfare; it's like having capital;
- It is part of the traditional memory and its cultivation in AYNI reproduces social integration patterns.

It was noted that lack of nutrient consumption of animal and plant origin is due to the limited information and reflection existing at the community level, which provides an opportunity to assess the benefits of diet based on vegetable and animal nutrients that could optimize their nutrition, recovering their traditional products and foods.

The high levels of effective bioavailability of vegetable-source iron is not enough and, added to the vitamin A deficiency, causes a high prevalence of anemia, low physical performance and reduction of disease resistance in children and pregnant women. Calcium deficiency causes children and adolescents to be at risk of poor growth and poor bone development. Also, women of childbearing age are at risk of complications in pregnancy and childbirth, children with low birth weight, vitamin A deficiency, and infections.

**Table N° 3 Essential nutrients consumed by families according to food sources**

Macronutrients and micronutrients	Main Source		Products or foods of origin
	Vegetable	Animal	
<b>Energy</b>	Almost always	Rarely	Grains and its derivatives and tubers
<b>Protein</b>	Almost always	Rarely	Grains and its derivatives
<b>Fat and oils</b>	Almost always	Rarely	Vegetable oil and animal fat
<b>Carbohydrates</b>	Almost always	Never	Processed foods, tubers and grains
<b>Iron</b>	Almost always	Rarely	Grains, toasted flours and local vegetables
<b>Vitamins</b>	Almost always	Never	Vegetables from outside
<b>Calcium</b>	Almost always	Rarely	Grains and its derivatives

Source: Berti P. 2010; Jones A. 2010; information obtained in workshops by World Neighbors

<sup>5</sup> Testimonies of participants in workshops organized by World Neighbors and registered in Field Notebooks 2010, Video Sumaq Mikhuna 2011; Participatory Learning Records 2012.

Nutrition has been seen from within (community) and from an external view (Project) as being deteriorated by factors such as: the irregular support between spouses; insufficient Dietary Diversity to adequately feed young children and provide themselves with nutritious food; attachment to non-nutritious outside foods, scarce dialogue – and thus, the lack of awareness on the importance of ancestral foods and future consequences of a poor diet – the few spaces to sensitize and educate mutually in the community; the lack of understanding of the effects of nutrition on infants and young children and of the nutritional composition of meals. The basic causes of child malnutrition become obvious: insufficient consumption of energy, protein, micronutrients and fat sources; in short, an inadequate diet.

On the basis of dialogue between WN and communities, the importance of improving the agro-centre family feeding, that conserves many ancestral practices, such as the language (Quechua-Aymara); the AYNI; the complementarity; the veneration of deities as the *Pachamama*; the use of local medicines; and local technologies of food processing was stated. With the communities themselves, it was identified that feeding is a determining factor for building the individual and collective potentials to make possible the emergence of the community.



**Table N° 4. Collective Statements on the effects of good and poor nutrition in the community**

Good nutrition helps to:	Bad nutrition leads to:
“Yuyay”: the cognitive development to discern life and community destiny wisely.	“Umamuyuy”: a lack of concentration and understanding.
“Kawsay”: to live more years and not get sick	“Onqoy”: vulnerability to contracting diseases
“Kallpa”: to have the strength to live and work in the environmental conditions of the area.	“Phara”: weakness and inconsistency with the strength requirements for agro-centered.

Source: Participatory workshops on feeding, October and November 2012

## Findings during the Implementation

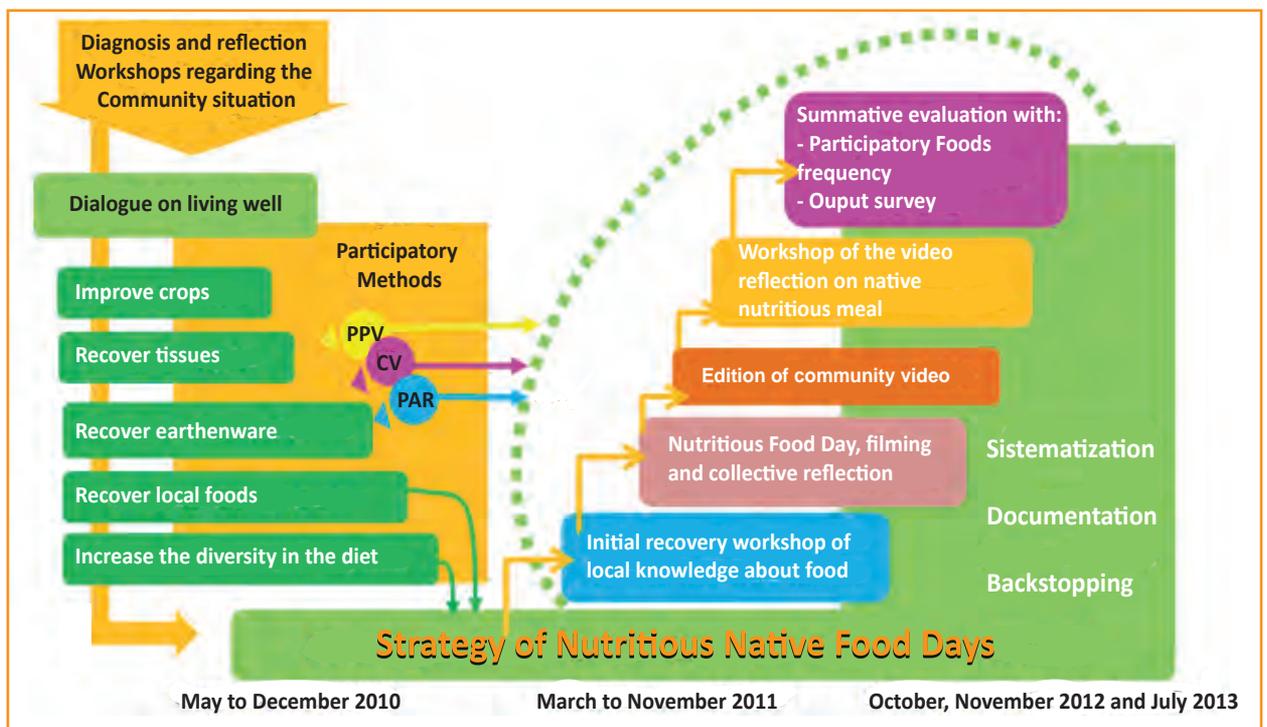
In the process, visits were made to the five communities to agree on a working strategy of common interest between families and the institution. This dialogue was oriented towards the concept of “Living Well.” The knowledge was recovered by developing an inventory of locally grown and processed products, products purchased or exchanged and their preparation according to the ancestral tradition. Participatory methods (PPV, PAR and CV<sup>6</sup>) formed the basis for the work with people and reflections. At the end of this process, the groups reached a consensus on a working strategy, called “Native Food Days,” that was oriented towards improving Diet Diversification.<sup>7</sup>

<sup>6</sup> PPV, Participatory Processes of Visualization, PAR, Participatory Action Research and CV, Community Video.

<sup>7</sup> In dialogue with communities, also were other aspects that lead to good living, to improve crops, weaving recovering, utensils, afforesting with native plants, among others, which were taken during the proceedings according to the prioritization carried out in each community. The Native Food Days was constituted in the short-term strategy.

The process of “Native Food Days,” shown in the following graphic, became a learning experience with which to address three thematic topics of the project. As a result, it lasted over a year. Facilitators - supported by other professionals in the fields of research, participatory methods, and the use of scripts – enriched the experience at a time when World Neighbors was strengthening its conceptual approach to development work so that it would become “development from the people,” with the generation of results based on local resources and potentialities.

**Figure N° 3. Consensus process and implementation of the “Native Food Days” strategy**



Implementation period: April 2010 to November 2011

Preliminary period of evaluation: October and November 2012

### Description of Native Food Days

In each community, the Native Food Days enjoyed the participation of mothers, fathers, boys, girls, and grandparents. Families gathered in groups and prepared two or three meals in a day. At the same time, the work, the reactions and the information generated was documented in videos, photographs and flipcharts. At the end of each day, prepared food was shared, reflecting on the process with the following questions: What encouraged me to do this activity? And, how did I feel preparing these meals?

Meals were chosen by the participants for their nutritious and ancestral nature. It was observed that most are known in the community and there were cases in which the same dish is prepared with different ingredients.

**Table N° 5. Ingredients used in some nutritional foods in the communities**

COMMUNITY	MEALS						
	<i>K'ispiña</i> Cake	<i>Thayacha</i> Ice cream	<i>Phisara</i> Graining	<i>Lawa</i> Soup	<i>Llusp'ichi</i> Stew	<i>Lisas uchu</i> Stew of <i>papalisas</i>	<i>T'anta</i> Bread
Camacachi	Wheat	Wheat	Quinoa	Wheat	Wheat	Papalisa, potato, chuño and onion	Wheat, salt, yeast
Alta Ticanoma 1	Wheat	Wheat, barley, maize, oca	Quinoa	Maize, Wheat	Wheat	Papalisa, potato, chuño or rice and onion	Wheat, salt, yeast
Chacoma	Wheat	Wheat, potato, oca	Quinoa	Maize, Wheat	Wheat	Papalisa, potato, chuño and onion	Wheat, salt, yeast
Lancaya	Barley	Barley, oca, potato	Quinoa	Barley	Barley	Papalisa, potato, chuño and onion	Barley, salt, yeast
Cayastía	Wheat	Barley, oca,	Quinoa	Wheat	Wheat	Papalisa, potato, chuño and onion	Wheat

Sources: Diagnosis workshops with communities, 2011.

## Identification of complementary activities

In each community, ideas emerged about actions that would help increase crops or nutritive products that favor food diversification, and these ideas were jointly planned for the short and medium term. In August 2001, in the community of Lancaya (4.065 mosl.) the idea arose of planting prickly pear cacti to take advantage of the climatic variation, mainly of temperature<sup>8</sup>. A year later, some families had already consumed the first fruits and, seeing that it was possible to grow this crop, they planted it again in order to increase the production and consumption of this fruit.

**Table N° 6. Complementary activities**

Community	Planned at medium term	Carried out at short term
Camacachi	Implementation of family tents for the provision of vegetables.	Elaboration and application of bio-fertilizers. Increased vegetable crops.
Alta Ticanoma 1	Improving irrigation for horticultural plots and fruit.	Elaboration and application of bio-fertilizers. Expansion of tuna varieties.
Chacoma	Transfer of water for human and animal consumption. Planting fruit.	Elaboration and application of bio-fertilizers.
Lancaya	Improving irrigation for horticultural plots and fruit.	Introduction of prickly pear and apple.
Cayastía	Reforestation as a source of firewood.	Increased crop and purchase of vegetables.

<sup>8</sup> As from 2005, with World Neighbors support, the communities have been adapting crops, among them vegetables and fruits.

## Periods of food scarcity and abundance

The months from November to January are generally the periods considered by the families to have the greatest food shortages; there are generally between two and five months of shortages, depending on the community. In the period of abundance, products also vary according to altitude; in communities of lesser height it is possible to have various food products; for those found at higher altitudes, the potato is almost always the most abundant food.

Figure N° 4. Agricultural Season, periods of scarcity and abundance in the communities

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Time of:		Scarcity			Abundance						Scarcity			
Community	Camacachi	Kqomer time			Harvey time	Qhasa time			Tarpuy time			Kqomer time		
	Alta Ticanoma 1	Jallmana time		Barbecho time	Harvey time			Mishka tarpuna		Tarpuna temporal				
	Chacoma	Rain time			Qhasa time			Harvey time			Rain time			
	Lancaya	Jallmana time	Carnival time	Lomana time	Harvey time			Tarpuy Llan'ay time						
	Cayastía	Jallmana time	Carnival time	Lomana time	Harvey time	Ch'uñu time			Tarpuy time					

Source: RAP, Ca,18,09,2012

## Strategies to face periods of scarcity

While agricultural cycles are similar, in these central agro communities some differences arise due to their particular customs, which have been adopted in recent decades as a result of social, economic and environmental transformation. Each community has clearly identified and assumed the periods of scarcity and abundance, for which there are established strategies such as transforming potato into chuño for storage, storing grains or exchanging traditional products with the ones of the valley (barter), allowing them to have foods accessible at certain times of the year.

In the communities, there are different cultural practices and products according to weather conditions. In the ones of lower elevations, there are



fruits that increase diversity. Foods from outside are generally not available all the time and depend on the opportunity the family has to buy or exchange at the market (Locations of Neketa, Chiro Sacaca and K'asa mainly)<sup>9</sup>. Vegetables such as carrots, tomatos and onions are consumed in smaller amounts.

<sup>9</sup> Participatory Workshops Cayastía and Chacoma, November 2012.



Camacachi - 3.807 masl



Cayastía - 4.095 masl



Lancaya - 4.065 masl

Table N° 7. Main local products and food products from outside

Community	Time of:	Local foods available	Outside foods available	This time meals
Camacachi	Abundance	Fresh potato, fresh chuño, onion, maize, carrot, green bean, quinoa.	Tomato, oil, fruits, sweets, locoto, sugar, noodle, cookies, rice, onion and carrot.	Wathía (grill backed potato), muraya (fresh chuño), chuño phuti, phisara (quinua grain), chapu (mix of grains with broth), jak'a lawa (soup of corn), llusp'ici (soup of wheat).
	Shortage	Chuño, potato stored.	Tomato, oil, fruits, sweets, locoto, sugar, noodle, cookies, rice, onion and carrot.	Noodle uchu .
Alta Ticanoma	Abundance	Fresh potato, oca, papalisa, fresh chuño, dry pea and bean, maize, carrot, onion, lettuce, tuna, peach, apple, maize, meat, egg.	Tomato, oil, fruits, sweets, locoto, sugar, noodle, cookies, rice, onion and carrot.	Mote of bean, tarwi and maize, wheat flour, bread, phiri, k'ispiña (cupcakes of barley or wheat), chuño with cheese, humintas of maize.
	Shortage	Chuño, potato stored, dry beans and peas, meat.	Tomato, oil, fruits, sweets, locoto, sugar, noodle, cookies, rice, onion and carrot.	Snack of potato and chuño, stew of rice and noodle.
Chacoma	Abundance	Fresh potato, fresh chuño, wheat, grains, meat, charque, chaqallu (green bean and pea), corn, oca, papalisa, ch'iwa (quinoa green leaves) peach, tuna.	Oregano, orange, apple, banana, tomato, oil, sweets, locoto, sugar, noodle, cookies, rice, onion, carrot.	Thayacha (ice cream of pito), muraya, bread, roasted, pitos (kind of flour).
	Shortage	Chuño, potato stored.	Tomato, oil, fruits, sweets, locoto, sugar, noodle, cookies, rice, onion and carrot.	Snack of potato and chuño, uchu of rice and noodle.
Lancaya	Abundance	Fresh potato, oca, papalisa, grain, wheat, bean, pea, cheese, meat.	Tomato, oil, fruits, sweets, locoto, sugar, noodle, cookies, rice, onion and carrot.	Muraya phuti with charque, roasted, wathía, snack with cheese, k'ispiña, sour of ch'iwa, pitos, snack of quinoa, kanka (lamb meat), snack of oca.
	Shortage	Chuño, potato stored.	Tomato, oil, sweets, locoto, sugar, noodle, cookies, rice, onion.	Snack of potato and chuño.
Cayastía	Abundance	Fresh potato, chuño, beans, barley, quinoa, papalisa.	Tomato, oil, fruits, sweets, locoto, sugar, noodle, cookies, rice, onion and carrot.	Meat of lamb cooked, wathía, k'ispiña, llusp'ichi.
	Shortage	Chuño, potato stored.	Tomato, oil, fruits, sweets, locoto, sugar, noodle, cookies, rice, onion and carrot.	Snack of potato and chuño.

Source: Diagnosis workshops with communities, 2011

Potato is the main food product in the five communities<sup>10</sup>, as well as the main crop; together with chuño they are the most popular products used in barter with outside products. In each particular case, they are negotiated depending on quality and quantity.

**Table N° 8. Potato and Chuño as exchange products**

BARTER	COMMUNITIES				
	Camacachi	Alta Ticanoma 1*	Chacoma	Lancaya	Cayastía
Change for:	Fruits and vegetables	Prickly pear, bean, pea and maize	Not traded	Vegetables and fruits	Vegetables, fruits, canned sardines and bread

\* This community receives potato and chuño for their products

### Rapid assessment with the Participatory Foods Frequency tool

With all the communities, an exercise of participatory intermediate evaluation was carried out on the Diet Diversity topic using the “Participatory Foods Frequency tool”<sup>11</sup>. Although the data collected are approximate, they permitted dialogue and reflection with the communities about the degree of improvement in the diversification of their meals with nutritious food. The Participatory Foods Frequency evaluations were carried out in November 2011 and November 2012. The key question was: What nutrients has the family consumed over the last week (the past 7 days)? The participants reflected and then they filled in a flipchart<sup>12</sup> with the respective information of their case, showing their food intake in a visual and public way. The flipchart of “Meal Frequency” had as a column title the most nutritious foods, from both local and outside sources: wheat, quinoa, beans, corn, peas, tarwi, rice, noodles, carrots and chard. The first ones were prioritized in previous participatory workshops as “key products” because they are accessible by families and they contain a high nutritional value in family and child feeding.

A year after starting the process of learning-action on diet diversity, it was observed, in general, that there was significant improvement in the five communities. An average of 48% of cases had learned to diversify their meals with more nutritive food, especially amongst the communities situated at lower altitude (Camacachi, Alta Ticanoma). The collective analysis with communities also showed the improvement achieved by strengthening the motivation and challenging them to further diversify their diet.

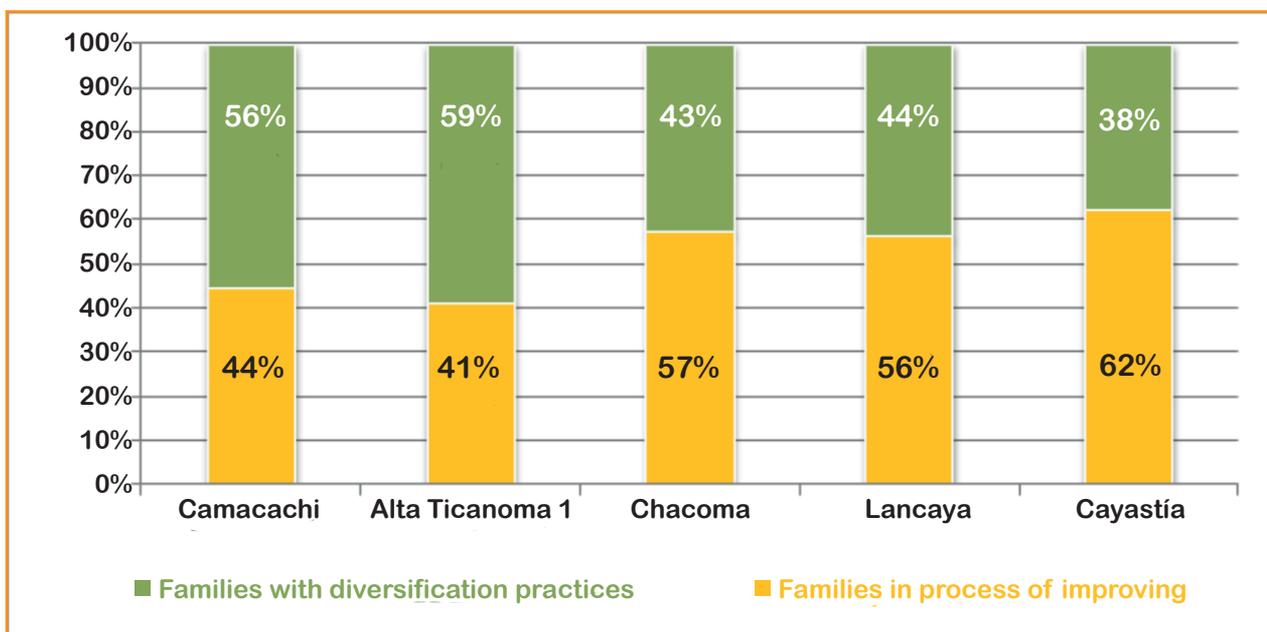


10 According to local sources, the average per land used per family is 0.9 has/family, with an average of 29.04 qq/has. (26 qq/family). The 22.70% is destined to family consumption in fresh; 35.04% as seed for the next farming season; only 3.10% of the production is destined for sale; and 39.16% of potato is for the elaboration of chuño (from 10 quintals, 2,5 quintals can be obtained). Part of the chuño is destined to sale and exchange with complementary foods (rice, coca, sugar) and other family requirements like school materials (Cfr. PDM Sacaca 2009-2012).

11 It is a method used to obtain information about food consumed (key products) in the last week (7 days), developed by ProPAN (Process for the Promotion of Child Feeding) based on recommendations by OPS and UNICEF; this tool is oriented to identify problems and find solutions to subjects like: little diverse family meals, meals with which the complementary feeding of children starts, early weaned children, infants children diets. Data on the “Frequency of Meals” are complemented by the “Reminder 24 hours” tool, where besides food is ordered in a list of frequency of consumption in descending order from most to least consumed, the months are identified in which these foods are available and other applications (ProPAN, OPS/ UNICEF 2004).

12 The tool used was adapted by the World Neighbors Team, who designed a large flipchart with the purpose of being visual, promoting the participation and collective reflection of participants.

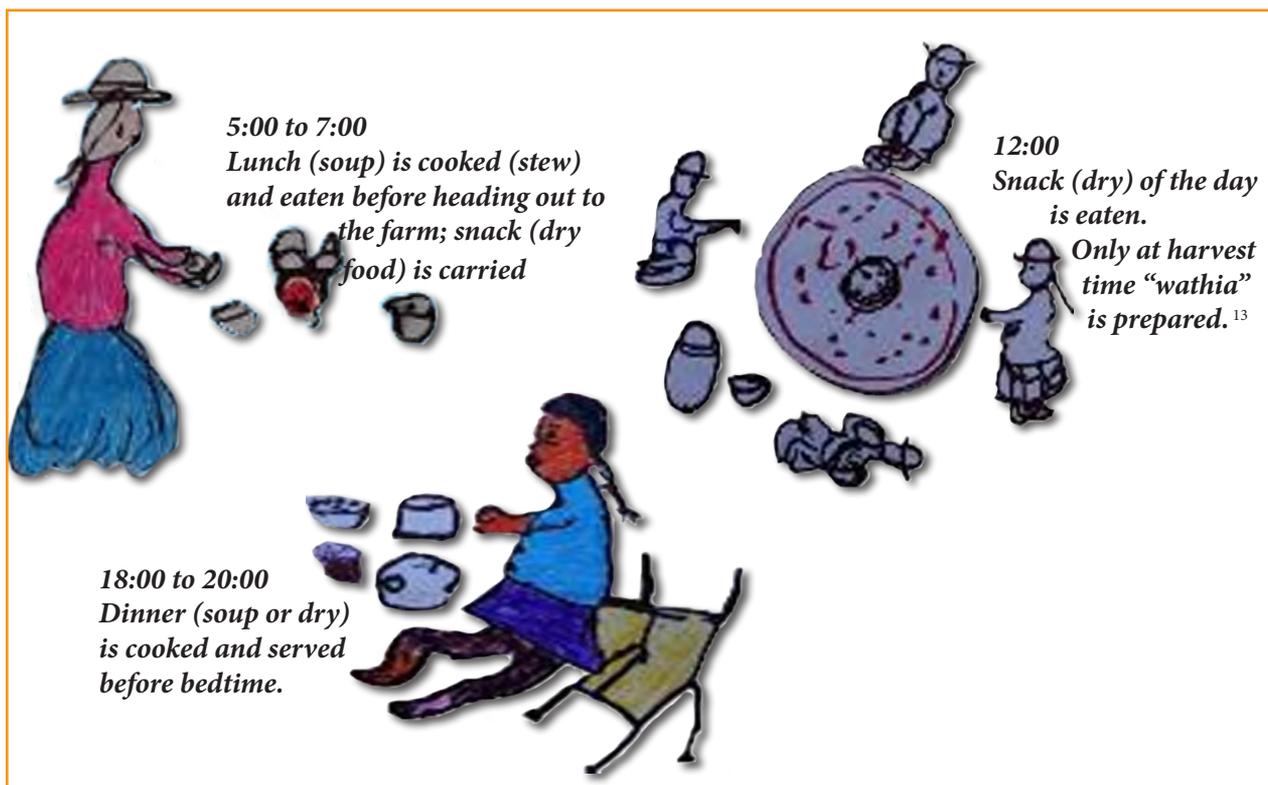
**Table N° 9. Assessment of the improvement process of diet diversity**



Source: Participatory Evaluation/Meal Frequency Tool, Nov 2011 and Nov 2012

Before starting the analysis of the data by community by using the “Participatory Foods Frequency” tool, it is important to consider on one hand that, in communities, there are two times to prepare meals: very early in the morning and at night; and on the other, that these meals are consumed three times a day: in the morning before heading out to the farm, at noon and in the evening before bedtime.

**Figure N° 5. Modality of food preparation and consumption**



<sup>13</sup> The *wathia* (*jap'iwayku*) sustains them rather than boiled potatoes; so when they eat potato there is always chuño; instead the *wathia* is eaten alone. This is because, in the cooking process under ground the *wathia* is dehydrated, but maintains its properties because the energy transfer does not occur. Families generally make a lot of *wathia* and still eat it the following day as “*t'impura*” that is, reheated in boiling water.

On weekends or off-days (holidays), mothers – alone or with family support – deal with peeling grains, making corn nuts and pito (a kind of flour) and soaking food to be ready during the week.

Another aspect to be considered in the preparation and meal consumption is the fact that some nutritional products such as quinoa and tarwi – according to the mothers – are difficult to prepare, as these require a pre-treatment, processing, and plenty of water or a great deal of time for cooking.

**Table N° 10. Local foods that are easy or difficult to cook according to mothers**

Easy preparation	Somewhat difficult preparation	Very difficult or laborious to prepare
Potato, wheat, rye.	Beans and dry pea. Maize, barley.	Quinoa and tarwi

*Tarwi* is a difficult nutritious products to prepare: that is why its consumption is lower. Its preparation involves: i) Soak in the river with running water for eight days to remove the saponin, so in times of great floods or water shortages, this activity is not performed; ii) cook it all day, for which much wood, practically a *k'epi*, is required: this amount of wood could suffice for cooking at home for several days. In places where there is little wood, this is a difficulty, especially during rainy season<sup>14</sup> when firewood is not only scarce but also wet.

Taking into account these considerations, an “Expected weekly food consumption pattern” has been identified for each community<sup>15</sup> as shown in the following tables.

### Community of Camacachi

Camacachi, located at 3.807 masl, is located 2 km from the Sacaca market. The evaluation in this community took place in the early times of scarcity (November) in order to verify meal diversification and the food products used. Data were analyzed from six families selected for participating in both evaluations, corresponding to 26% of the total number of families (23) participating frequently in this community.

The highlighted data represent the nutritious food or “Key products” and the number of times they were consumed by families in the past week.

**Table N° 11. Community of Camacachi**

<b>Local foods:</b>
New potatoes, wheat, barley, fresh chuño, onions, maize, carrots, green beans, green peas, quinoa, old potatoes, chuño, dry beans, dry peas.
<b>Foods purchased and/or traded outside:</b>
Tomato, oil, fruits, sweets, locoto, sugar, noodles, cookies, rice, onions and carrots.
<b>Frequent meals:</b>
<i>Wathia</i> (fresh potato cooked at grill), <i>muraya</i> (freshly prepared chuño), <i>chuño phuti</i> , <i>phisara</i> (quinoa grain), <i>chapu</i> (a mix of pito with broth), <i>jak'alawa</i> (maize soup), <i>llusp'ichi</i> (peeled wheat soup), noodle stew.

<sup>14</sup> Based on observation and evidences in supporting families.

<sup>15</sup> The expected pattern of consumption is the number of times that a family eats food/product in a week. This data was obtained based on the estimated calculations provided by participants in the respective workshops.

Table N° 12. Evaluations with the Participatory Foods Frequency tool

Community of Camacachi			¿How many times did you consume the product last week?									% of food diversified by family. (November 2012)
Mothers and fathers participating in two evaluations	Mothers with child under 5 years	Evaluation	Wheat	Barley	Maize	Bean	Pea	Tarwi	Oil	Carrot	Chard	
Fausta	No	1 (Nov. 11)	2	1	0	0	2	0	7	1	0	56%
		2 (Nov. 12)	7	0	1	2	2	0	7	1	0	
Dionisia	Yes	1 (Nov. 11)	7	1	0	2	7	0	7	1	0	67%
		2ª (Nov. 12)	7	1	1	2	1	1	6	1	0	
Martina	No	1ª (Nov. 11)	2	1	0	2	2	0	7	2	0	56%
		2ª (Nov. 12)	6	0	7	2	7	0	6	3	0	
Eleuteria / Fermina	Yes	1ª (Nov. 11)	7	2	1	3	4	0	7	2	0	44%
		2ª (Nov. 12)	7	1	0	1	2	0	7	3	0	
Trifonia	Yes	1ª (Nov. 11)	3	0	2	3	2	0	7	2	0	56%
		2ª (Nov. 12)	7	1	3	2	1	0	7	3	0	
Exalta / Sonia	Yes	1ª (Nov. 11)	6	1	0	7	0	0	7	2	0	56%
		2ª (Nov. 12)	0	0	1	7	0	0	7	4	1	
Average Consumed in days a week (november 2012)			5,7	0,5	2,2	2,7	2,2	0,2	6,7	2,5	0,2	
General interpretation by comparing the first and second evaluations			56%	Families that have improved the diversity of their meals								
			44%	Families in process of improvement.								

Source: World Neighbors, evaluation workshops with the “Participatory Foods Frequency” tool, Nov. 2011 and Nov. 2012.

In this community, wheat and oil appear to show the highest food consumption; meanwhile quinoa and tarwi are the least consumed. In most of the cases observed, vegetables are below the expected pattern of consumption.<sup>16</sup> Possible factors that make the meal diversification practices difficult include: i) difficult access to markets and the frequent use of processed foods like noodles and rice; ii) the short time available for mothers to prepare more nutritious meals because they assume more tasks due to the migration of men; iii) Lack of awareness on the importance of diversified food and the use of nutritional products.

### Community of Alta Ticanoma 1

Alta Ticanoma 1 is the community of lower altitude (3,358 masl) that is 12 km away from the Sacaca market. The evaluation in this community was also performed at the beginning of the shortage period (November) in order to verify the diversity of foods and food products used. Data from seven families chosen for having participated in both evaluations, corresponding to 58% of the total number of families (12) of this community participating in the project processes, were analyzed.

The highlighted data represent the nutritious food or “key products” and the number of times they were consumed by families in the past week.

In this community, wheat, oil and peas appear as higher food consumption; meanwhile quinoa and tarwi did not appear in family diets. In most of the cases observed, vegetables are consumed according to the expected pattern, that is, 3 to 4 times weekly. Possible factors that limit diversification practices of meals include: i) The distance to markets where they can stock up on vegetables; ii) The practice of buying wholesale noodle and rice when they return from their seasonal migrations; iii) Little awareness to the importance of feeding diversification and the use of nutritional products.

<sup>16</sup> This pattern is a rough estimate and expresses the time that families could consume such products or nutritious food, taking into account such factors as: the existence or absence of such product in the community, its proximity to markets, among others.

**Table N° 13. Alta Ticanoma 1 Community**

<b>Local foods:</b>
Potatos, oca, papalisa, fresh chuño, peas and beans (green and dry), maize, corn, carrots, onions, lettuce, peaches, prickly pears, apples, meat, eggs.
<b>Foods purchased and/or traded outside:</b>
Tomatos, oil, sweets, locoto, sugar, noodles, cookies, rice, onions and carrots.
<b>Frequent meals:</b>
Mote of bean, tarwi and maize, <i>pito</i> of wheat, bread, <i>phiri</i> , <i>k'ispiña</i> (pancakes of flour barley), chuño with cheese, maize humintas, potato and chuño snacks, stew of rice and noodle, <i>kanka</i> (cooked lamb).

**Table N° 14. Evaluations with the Participatory Foods Frequency tool**

Community of Alta Ticanoma 1			Expected pattern of consumption per week									% of food diversified by family. (November 2012)
Mothers and fathers participating in two evaluations	Mothers with child under 5 years	Evaluation	Wheat	Barley	Maize	Bean	Pea	Tarwi	Oil	Carrot	Chard	
Gregorio Mamani y Teodosia	Yes	1 (Nov. 11)	2	0	0	7	2	0	7	0	4	56%
		2 (Nov. 12)	3	0	0	7	2	0	7	2	0	
Marcelo Quispe y Teodosia	No	1 (Nov. 11)	7	0	2	1	1	0	7	0	3	67%
		2 (Nov. 12)	4	0	3	2	4	0	7	1	0	
Juan Juvenal Villca	No	1 (Nov. 11)	2	0	2	1	1	0	7	3	0	56%
		2 (Nov. 12)	2	0	2	1	1	1	7	2	0	
Tiburcio Villca y Andrea	Yes	1 (Nov. 11)	1	0	2	1	2	0	7	1	0	67%
		2 (Nov. 12)	2	0	2	2	1	2	7	5	0	
Demetrio Choque y Fracilicia	Yes	1 (Nov. 11)	2	0	0	2	2	0	7	0	3	67%
		2 (Nov. 12)	7	0	5	4	5	0	7	1	2	
Marcelo Choque y Victoria	Yes	1 (Nov. 11)	2	0	2	0	0	0	7	0	7	44%
		2 (Nov. 12)	2	0	0	0	7	0	7	2	7	
Severina Villca	No	1 (Nov. 11)	3	1	1	1	2	3	2	0	7	78%
		2 (Nov. 12)	7	0	3	3	2	0	7	4	7	
<b>Average Consumed in days a week (november 2012)</b>			3,9	0,0	2,1	3,1	0,4	0,2	7,0	2,4	2,3	
General interpretation by comparing the first and second evaluations			59%	Families that have improved the diversity of their meals								
			41%	Families in process of improvement.								

Source: World Neighbors, evaluation workshops with the “Participatory Foods Frequency” tool, Nov. 2011 and Nov. 2012.

“Noqa carpitayta sumaqta jallch’ani wakin runasqa carpatapis oveja corralman parachipunku”.

“I take good care of my solar tent but I’ve seen other neighbors who turned their tent into sheep pens”.  
Severina Villca, Alta Ticanoma 1.

## Community of Chacoma

Chacoma is a community located at 3,783 meters above sea level on the banks of the Ticanoma River belonging to the river basin of the same name. It is located at a distance of 14 km from the Sacaca market.

The evaluation in this community took place in the early times of scarcity (November) in order to verify the diversification of food and food products used. Data were analyzed from six families chosen for participating in both evaluations and corresponding to 40% of the total number of families (15) of this community that often participated in the project processes.

The highlighted data represent the nutritious foods or “Key Products” and the number of times they were consumed by families in the past week.

**Table N° 15. Community of Chacoma**

<b>Local foods:</b>
Potatos (news and olds), chuño (fresh and dry), wheat, barley, meat, charque (llama meat), beans and peas, (green and dry), maize, corn, oca, papalisa, chaqallu (fresh beans and peas), ch'iwa (leaves of green quinoa), quinoa, peaches, prickly pears.
<b>Foods purchased and/or traded outside:</b>
Oregano, oranges, apples, bananas, tomatos, oil, sweets, locoto, sugar, noodles, cookies, rice, onions and carrots.
<b>Frequent meals:</b>
<i>Thayacha</i> (pito ice cream), <i>Wathia</i> (fresh potatoes cooked at grill), <i>Muraya</i> (chuño freshly prepared), bread, toasts, pitos, potato and chuño snacks, stew of rice and noodles.

**Table N° 16. Evaluations with the Participatory Foods Frequency tool**

Community of Chacoma			Expected pattern of consumption per week										% of food diversified by family. (November 2012)
Mothers and fathers participating in two evaluations	Mothers with child under 5 years	Evaluation	Wheat	Barley	Maize	Bean	Pea	Tarwi	Oil	Carrot	Chard		
Ciprián Inocente	No	1 (Nov. 11)	1	0	1	2	0	0	7	3	0	33%	
		2 (Nov. 12)	2	0	0	3	4	0	2	0	0		
Johny Tola	No	1 (Nov. 11)	7	0	2	2	2	0	7	7	0	44%	
		2 (Nov. 12)	7	0	7	2	1	0	3	2	0		
Tomás Inocente	No	1 (Nov. 11)	3	0	3	2	0	0	2	0	4	33%	
		2 (Nov. 12)	2	0	0	1	2	0	0	4	0		
Margarita Rojas	Yes	1 (Nov. 11)	0	0	0	0	0	0	2	2	0	33%	
		2 (Nov. 12)	1	0	0	2	3	0	7	1	0		
Sabino Calani	Yes	1 (Nov. 11)	4	0	3	0		0	7	0	1	78%	
		2 (Nov. 12)	7	0	4	3	3	1	7	2	4		
Francisco Fábrica	No	1 (Nov. 11)	7	0	3	0	7	3	7	3	0	33%	
		2 (Nov. 12)	7	0	0	2	0	0	7	0	0		
Average Consumed in days a week (november 2012)			4,3	0,0	1,8	2,2	2,2	0,2	4,3	1,5	0,7		
General interpretation by comparing the first and second evaluations			43%	Families that have improved the diversity of their meals									
			57%	Families in process of improvement.									

Source: World Neighbors, evaluation workshops with the “Participatory Foods Frequency” tool, Nov. 2011 and Nov. 2012..

In this community, most families (57%) are in the process of improvement in the diversification of their meals; it was noted that wheat, oil, beans and peas appear as higher food consumption; meanwhile quinoa and tarwi are hardly consumed. Vegetables also have low consumption since the acceptable range is between 3-4 times a week. It is considered that the hindering factors are: i) The distance to markets where they can stock up on vegetables; ii) The practice of buying wholesale noodle and rice when they return from their seasonal migrations or of bringing rice from their own rice plots in the tropics of Cochabamba; iii) Maintaining the almost exclusive practice of eating potatoes or chuño, noodles or rice due to low awareness to the importance of diversified feeding and consumption of nutritious products.

*“We could eat, but my mom is already old and it is very difficult for her to prepare quinoa because she does not see well; we have some quinoa in my house”.* Tomas Inocente, Chacoma.

## Community of Lancaya

Lancaya is located at an average altitude of 4,065 meters, 12 km away from the weekly ChiroK’asa market.

The evaluation in this community was carried out in early times of scarcity (November) with the purpose of verifying the diversification of food and food products used. Data were analyzed from eight families chosen for having participated in both evaluations, corresponding to 38% of the total (21) families of the community that are frequently involved.

The highlighted data represent the nutritious foods or “Key Products” and the number of times they were consumed by families in the past week.

In this community, most families are in the process of improving their meal diversification; they are constantly consuming meals based on potatoes or chuño because these foods are consistently considered to provide a lot of energy to face the hard routine tasks of men and women. From the data obtained in participatory evaluation and reflection with the community, it was found that diversification is more feasible in the time of plenty (March to July), and that nutritious products are consumed every two weeks and, even each month, as the main products are potatoes, chuño and barley.

*“Although it seems that we are wrong, I see we are improving; we only consume products every other weekend; but we need to put in practice everything we learn ... this evaluation has also to be done by us in green time.”* Rene Ramos, Lancaya.

**Table N° 17. Community of Lancaya**

<b>Local foods:</b>
Potatos, oca, papalisa, grains, wheat, beans, peas, cheese, meat.
<b>Foods purchased and/or traded outside:</b>
Tomatos, oil, sweets, locoto, sugar, noodles, cookies, rice, onions, carrots and maize.
<b>Frequent meals:</b>
<i>Muraya</i> (chuño freshly prepared), <i>phuti</i> (baked potato and scrambled with eggs or peanuts) with <i>charque</i> , roasted, <i>wathia</i> (fresh potatoes cooked at grill), snacks with cheese, <i>k’ispiña</i> (pancakes of barley pito), soup of <i>ch’iwa</i> (quinoa of green leaves), pitos, <i>kanka</i> (lamb cooked), oca snacks.

Table N° 18. Evaluations with the Participatory Foods Frequency tool

Community of Lancaya			¿How many times did you consume the product last week?								% of food diversified by family. (November 2012)
Mothers and fathers participating in two evaluations	Mothers with child under 5 years	Evaluation	Wheat	Barley	Maize	Bean	Pea	Tarwi	Oil	Carrot	
Florencio Flores	No	1 (Nov. 11)	7	0	0	0	0	0	1	0	50%
		2 (Nov. 12)	2	0	1	0	1	0	7	7	
Lorenzo Ramos	No	1 (Nov. 11)	5	0	0	0	5	0	4	4	50%
		2 (Nov. 12)	1	0	1	0	0	0	7	0	
René Ramos	No	1 (Nov. 11)	7	0	0	4	0	0	6	0	38%
		2 (Nov. 12)	0	0	1	0	0	0	7	3	
Braulio Ramos	Yes	1 (Nov. 11)	3	0	1	2	1	0	0	0	38%
		2 (Nov. 12)	2	0	0	1	0	0	0	0	
José Ramos	Yes	1 (Nov. 11)	6	0	6	0	0	0	3	5	38%
		2 (Nov. 12)	0	0	1	7	0	0	7	0	
Félix Flores	Yes	1 (Nov. 11)	7	0	0	2	1	0	7	0	38%
		2 (Nov. 12)	0	0	0	0	2	2	7	1	
Sergio Ramos	No	1 (Nov. 11)	7	0	0	7	7	0	2	2	50%
		2 (Nov. 12)	0	0	1	0	1	1	1	2	
Juan Ramos	Yes	1 (Nov. 11)	7	0	0	5	7	0	7	2	50%
		2 (Nov. 12)	1	0	1	1	7	1	7	0	
<b>Average Consumed in days a week (november 2012)</b>			<b>0,8</b>	<b>0,0</b>	<b>1,8</b>	<b>1,1</b>	<b>1,4</b>	<b>0,5</b>	<b>5,4</b>	<b>1,6</b>	
General interpretation by comparing the first and second evaluations			<b>44%</b>	<b>Families that have improved the diversity of their meals</b>							
			<b>56%</b>	<b>Families in process of improvement.</b>							

Source: World Neighbors, evaluation workshops with the “Participatory Foods Frequency” tool, Nov. 2011 and Nov. 2012

## Community of Cayastía

The Cayastía community is located at a higher altitude because it is at 4,095 masl, 22 kilometers from the weekly ChiroK’asa market and 43 Km from the Lllallagua market. The evaluation in this community also took place in the early times of scarcity (November) in order to verify the food diversification and food products used.

Data were analyzed from eight families selected for having participated in both evaluations, corresponding to 35% of the total number of families of the community (23) who are frequently involved.

The highlighted data represent the nutritious foods or “Key Products” and the number of times they were consumed by families in the past week.

In Cayastía, most families correspond to the category “In process of improvement” in terms of their meal diversification. The almost exclusive consumption of potatoes or chuño strongly prevails due to several factors, as expressed by the mothers themselves: i) These are foods that provide a lot of energy to perform the work of the farm or herding the animals; ii) It is customary to eat these foods; iii) There is little information on the benefits of local foods and those brought in from outside; iv) There is little interest from mothers and fathers to participate in the events implemented in the community. Something that can be recovered is the ancestral consumption of *Okhoruro*<sup>17</sup> (Andean watercress) in rainy season (January to March) whose nutritional properties are exceptional ; however, since they have access to other vegetables, fewer families consume it, using it instead as fodder

17 The fresh *Okhoruro* (Andean watercress) has 1.05 mg / 100g more iron than chard; It also has 0.45 mg / 100 Zinc, while chard has no zinc; Dehydrated it reaches 156.79 mg / 100g of Iron

Table N° 19. Community of Cayastía

<b>Local foods:</b>
Potatos, chuño, beans, barley, quinoa, papalisas, <i>okhoruro</i> .
<b>Foods purchased and/or traded outside:</b>
Tomatos, oil, sweets, locoto, sugar, noodles, cookies, rice, onions, carrots and maize.
<b>Frequent meals:</b>
<i>Kanka</i> (lamb cooked), <i>wathia</i> (fresh potatoes cooked at grill), <i>k'ispiña</i> (pancakes of barley pito), <i>llusp'ichi</i> (soup of peeled wheat), potatoes and chuño snacks, <i>okhoruro soup</i> (Andean watercress).

Table N° 20. Evaluations with the Participatory Foods Frequency tool

Community of Cayastía			Expected pattern of consumption per week								% of food diversified by family. (November 2012)
Mothers and fathers participating in two evaluations	Madres con menor de 5 años	Evaluation	Wheat	Barley	Maize	Bean	Pea	Tarwi	Oil	Carrot	
Paulina Montaña	Yes	1 (Nov. 11)	7	1	0	7	0	0	7	4	38%
		2 (Nov. 12)	0	0	0	2	0	0	7	3	
Eulogia Condori	Yes	1 (Nov. 11)	1	0	7	0	2	0	2	0	38%
		2 (Nov. 12)	2	0	3	0	0	0	4	0	
Jobita Laura	Yes	1 (Nov. 11)	1	0	0	1	0	0	7	0	25%
		2 (Nov. 12)	5	0	0	1	0	0	0	0	
Andrea Montaña	Yes	1 (Nov. 11)	2	0	2	0	1	0	3	0	50%
		2 (Nov. 12)	0	0	1	3	2	0	7	1	
Virgilia Mamani	Yes	1 (Nov. 11)	1	0	2	1	0	0	2	0	38%
		2 (Nov. 12)	2	0	0	3	0	0	4	2	
Eduardina Arias	Yes	1 (Nov. 11)	0	1	0	1	0	0	7	2	50%
		2 (Nov. 12)	2	0	1	7	0	0	7	1	
Eusebia Mamani	Yes	1 (Nov. 11)	3	0	2	4	6	0	7	0	50%
		2 (Nov. 12)	7	0	1	3	0	0	7	2	
Filomena Cuchusa	No	1 (Nov. 11)	3	0	0	0	0	0	3	0	13%
		2 (Nov. 12)	0	0	0	1	2	0	2	0	
Average Consumed in days a week (november 2012)			2,3	0,0	0,8	2,5	0,5	0,0	4,8	1,1	
General interpretation by comparing the first and second evaluations			38%	Families that have improved the diversity of their meals							
			62%	Families in process of improvement.							

Source: World Neighbors, evaluation workshops with the "Participatory Foods Frequency" tool, Nov. 2011 and Nov. 2012.

## Results of Diversity in the Diet

The different activities, methodologies and tools applied in the process have contributed to families' commitment to improve their diet. Comparative intermediate results collected through the Participatory Food Frequency tool (November 2011 and November 2012) showed major improvement in Diet Diversity in the five communities. An average of 48% cases (families) compared in both periods, presented diversification practices, with communities at lower altitudes (Chacoma and AltaTicanoma 1) managing to diversify their meals with more nutritious food. The collective analysis with the communities also identified this improvement, motivating participants to continue to better diversify their diets.

In June 2013, according to the final evaluation of the Project survey, of the 38% of families who bought no nutritious food whatsoever in the last month of 2010, the average for 2013 decreased to 14% of families; and of the 63% of families who bought nutritious foods in 2010, the average rose to 84% in 2013.

There is a significant difference in consumption of numerous nutritious foods: vegetables with vitamin A: 73% of families in 2010 versus 89% in 2013; meat: 43% in 2010 versus 80% in 2013; oil: 79% in 2010 versus 91% in 2013. We note an increase in all foods.

In terms of legume consumption, there were no major changes between 2010 and 2013; surveys were conducted at different times: in March 2010, which is a green time, following the rainy season, when people have wild vegetables like Okoruro, beans and peas in pod and families still do not have a lot of work; in June 2013, when families are in the midst of potato harvest season and have a lot of work to do, so they cook easy-to-prepare foods such as boiled potatoes (in wathia) and charque. However, families did consume some legumes, which can be considered an achievement. It is also noted that 90% consumed fat and oils over the past week.



## Conclusions and learning

The potato is the most abundant food in the Northern Potosi communities and people attributed many benefits to this crop, including: i) it is a food that fills their stomachs, gives them strength and sustains them at work; ii) can be stored, giving them security; iii) It is a “cash” crop that can be exchanged with any other product. From this, we understand that potatoes will always be the main crop and the highest consumed food product, so the strategy to rescue the native varieties may be another way forward, given their better nutritional contribution versus the Waych'a variety that currently is sown in greater volume.

Participatory reflection has shown that there is a diversity of products and crops in communities that can meet the requirements of the family diet. This diversity is the result of adaptations or experiments by the families, and include options such as growing a greater number of varieties of potatoes, prickly pears and apples, thanks to the increase in temperature. It is clear that families have difficulty growing nutritious foods such as quinoa and tarwi, due to factors such as their vulnerability to pests, the difficulty of obtaining seeds, the preference for the potato crop or the amount of time and water required to prepare these foods for cooking.

At present, processed foods, such as noodles, are part of the diet of most families, so as part of a strategy to diversify foods, families were encouraged to supplement these outside products with nutritious local foods such as grains, vegetables and meat.

Meat consumption is low. An average family sacrifices four to five sheep per year, during specific periods: fallow periods (L'ankay time), sowing (Tarpuy time) and harvesting, in which unfailingly meat is eaten. According to the participants, the meat is not essential in their meals because they use animal fat to replace

it. Furthermore, in the context of Northern Potosí, the purpose of raising animals is not the consumption, but the savings, as the animal can be sold in any emergency or cooked for a family celebration. Additionally, cattle are the only source of fertilizer. In the case of sheep, their manure, used as fertilizer, is essential for growing potatoes.

The diversity in families' diets depends on the agricultural period in which they find themselves. From November to January, for example, they consume food stored from the previous season, while males generally migrate and bring outside food such as rice, noodles, oil, sugar, vegetables and fruits. In these months, some families even ask to borrow chuño. This contrasts with the time of plenty, from March to April, in which



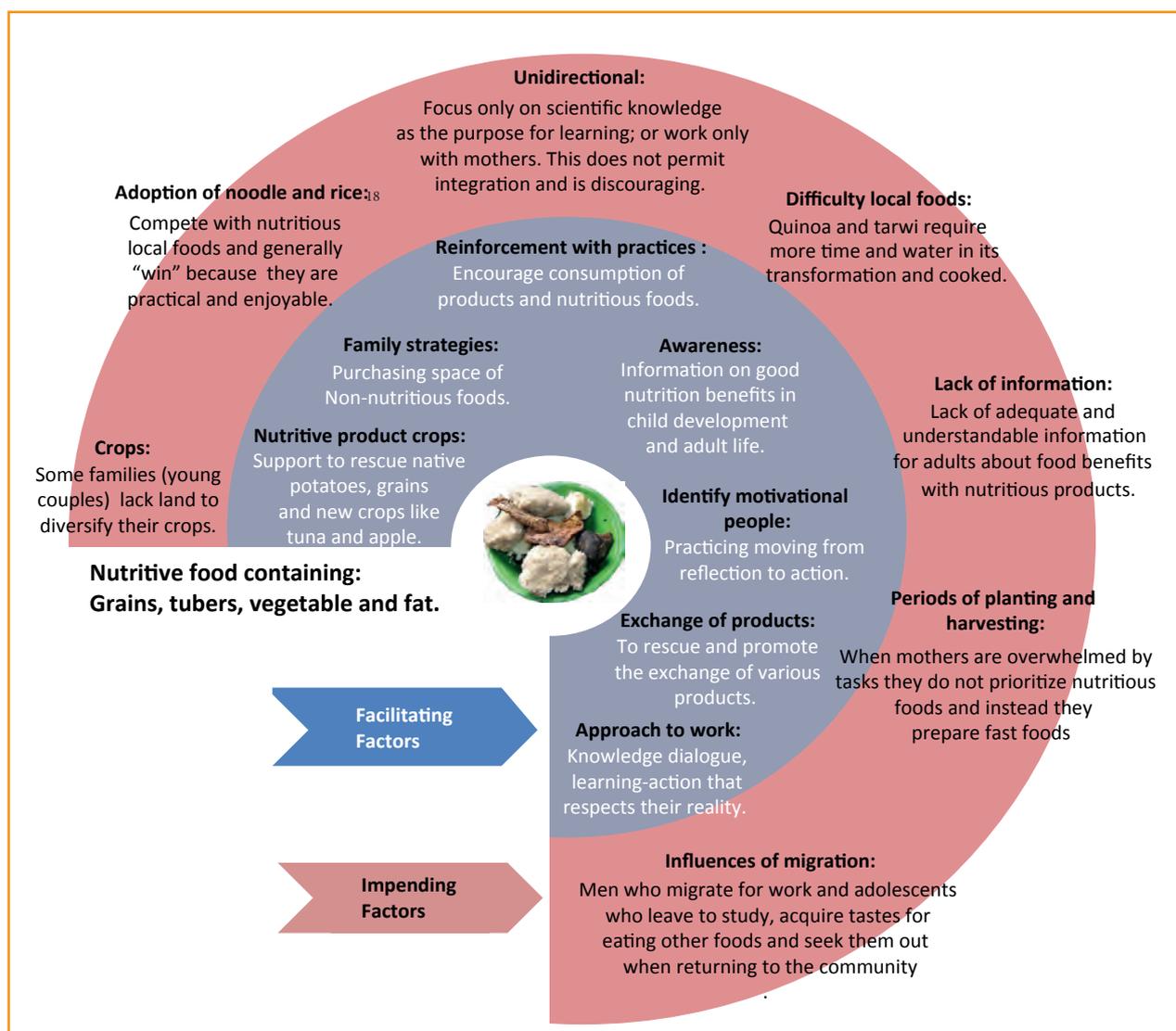
families can consume milk, cheese and wild products such as *Yuthu* (wild rabbit), *viscacha* (a rodent similar to a hare), *jataqo* (wild cabbage) and others.

Mothers, fathers, and grandparents perceive that good nutrition through diverse meals contributes to “*Yuyay*” or cognitive development, to discern wisely the lives and destinies of the community, to “*kawsay*” which is the ability to live longer and not get sick, and “*kallpa*” to have strength to live and work in the environmental conditions of the area.

With the “Native Food Days” strategy, which the families liked, the rescuing of ancestral nutritious meals was promoted, generating a valuable reflection and learning about the nutritional value of local and outside products, identifying the best strategies for putting this knowledge into practice. This strategy also created confidence and trust between the World Neighbors team and families due to the team’s friendly and horizontal treatment of them and the use of visual and empathetic methods strengthened families’ interest and commitment.

The Diet Diversity topic is important for families and essential to improve the nutrition of young children who are growing and developing; however, each day the families and, in particular, the mothers face

**Figure N° 6. Factors involved in the process of action-learning on diet diversity**



factors that either facilitate or limit meal diversity, including those that help the learning-action process and the limiting factors that should be addressed at both the family and community level. The most significant limiting factors are expressed are in the following diagram.

The experience of the WN team shows that improving feeding and nutrition in rural areas requires a holistic approach that also considers other factors such as local knowledge, objective valuation of their culture, horizontal treatment, and the use of methods that work with local culture and others. That is, the process must address issues beyond just improving productivity or the level of economic family income.

<sup>18</sup> It is clear that WN is aware that rice has nutritional properties superior to noodles. However, the study was carried out in a context where these products, among others, were replacing local products in most families.

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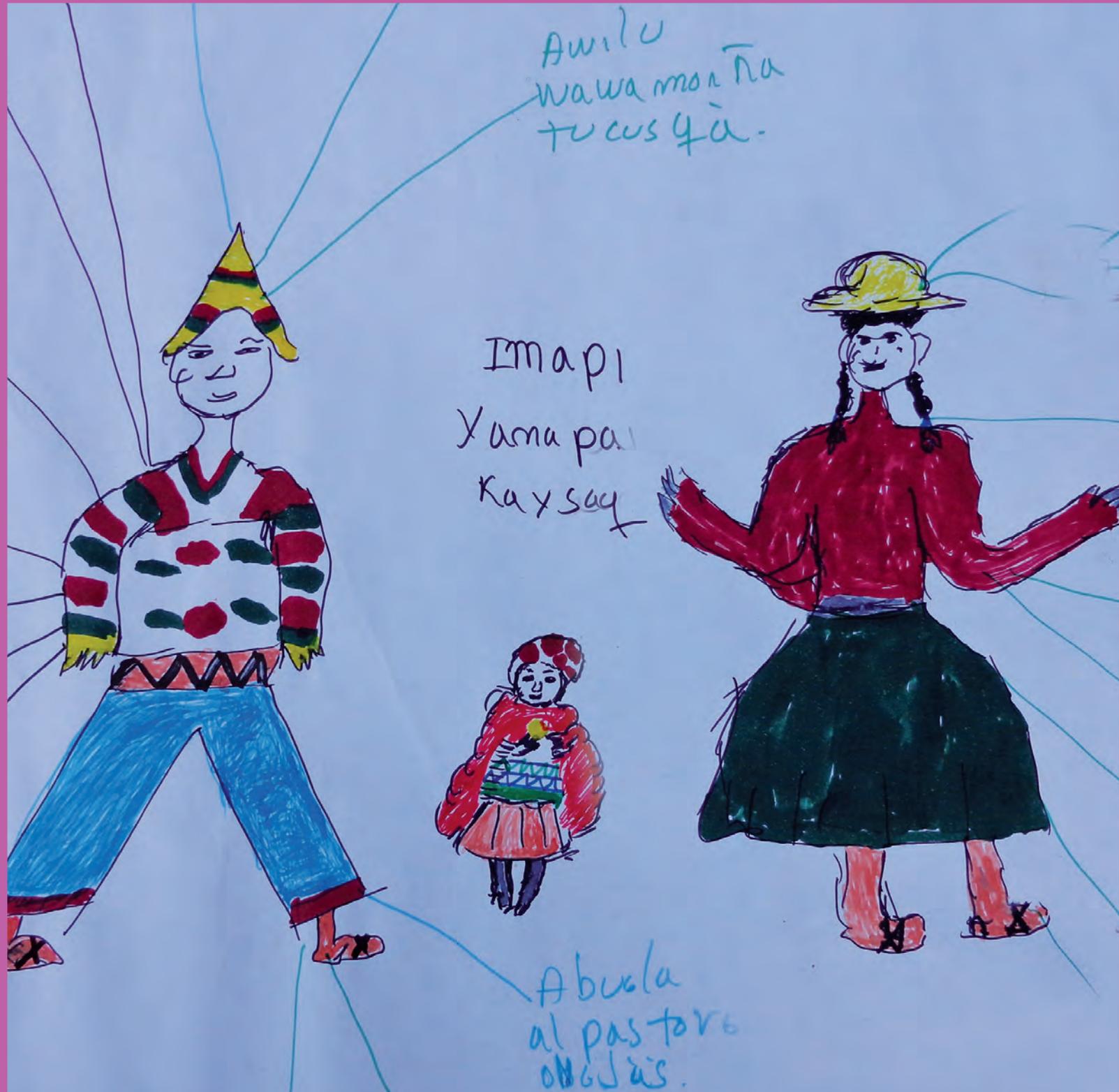
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Segment N° 2

## FAMILY SUPPORT

**PURAQMANTA YANAPANAKUNA**  
**LET US SUPPORT EACH OTHER**

# Background

For the women, men, and grandparents of the communities, Family Support is generally understood as the fulfillment of the roles assigned to each of them; as such, this issue seems important as men talk about supporting women and women speak of supporting the male, reaffirming the principle of duality “Chacha-Warmi” as well as complementarity with all members in family labor. From the women’s point of view, some dissatisfaction is perceived and expressed, – in some more than others – in relation to their workload; however, at the same time they assume that male roles also need to be considered because of the physical strength they demand<sup>1</sup>. Thus, we speak of family practices and the need for mutual support without detracting from the work of both women and men.

**Table N° 21. Individual and collective reflections about family support**

<p><i>“Working together we can have more food and having our children well”</i> (Exalta Villca, Camacachi)</p>	<p><i>“We work as men and women, both with our responsibilities”</i> (Severina Villca, Alta Ticanoma 1)</p>
<p><i>“Sheep herding and housework, those are always our role. That’s how we live every day. We live happily in the field”</i> (Valentina Aldaba, Camacachi)</p>	<p><i>“Sometimes, I get tired of chores. I think that women’s lives involve a lot of suffering; but also I see that men and women work together to survive”</i> (Juana, Alta Ticanoma 1)</p>
<p><i>“We both care for our children, but we must continue working as support to produce well and give good foods to our children ”</i> (Alberto Ramos, Lancaya)</p>	<p><i>“I really like men’s work, but men have to be more aware, but both the husband and the wife work together”</i> (Juan Choque, Alta Ticanoma 1)</p>
<p><i>“If we did not do all the household chores and the farmwork, we would be considered “wimps.” Men teach us things that we need to know, but a lazy man is difficult to change. That is why we women have to choose a working man”</i> (Exalta Villca, Camacachi)</p>	<p><i>“I like talking about family support because we live so well”</i> (Marcelo Choque, Alta Ticanoma 1)</p>
<p><i>“Men come from farm very exhausted due to the physical effort of planting or harvesting, and fall asleep from exhaustion; also the men weak up earlier every day”</i> (Exalta and Bernardina, Camacachi)</p>	<p><i>“ Men’s work doesn’t seem like much but it is a great effort in both agriculture and migration; women, on the other hand, have many tasks but these are smaller and require less effort.”</i> (All, Alta Ticanoma 1)</p>

Source: World Neighbors, visualized and documented material, March-June 2012

The WN team had the idea, before executing the workshops, that the mother was the main target of the family support, that is, that she should be supported by the members of a family living under the same roof (father and grandparents). Support was thought of in two main tasks: 1) care of children especially when they are two or more (especially with breastfeeding and adequate food); and, 2) in the activities required

<sup>1</sup> According to Marvin Harris, roles have to do with the division of labor, which basically involves assigning different tasks to children and adults, men and women. The author argues that in agricultural societies men plow the land and care for larger animals; women cook most plant foods, carry water, and do cleaning and other household chores, as well as taking care of young children (Harris, 2001).

for preparing meals, such as grinding the pito<sup>2</sup>. Under this same logic, the definition of family support of Andrew Jones' thesis (2010: 159) states that "Family support is the assistance and support from spouses or the husband's family to the wife, in tasks related to feeding infants and young children." The vision of the WN team was changing. After reflecting on participants' points of view, it was realized that women are not the only ones who require family support: the men and the other family members must fulfill their roles in order to achieve family balance.

WN's interest in family support is related to identifying best practices and opportunities which are necessary to improve family nutrition and nutrition in children under 5 whose survival and nutrition depends on the attitudes and care they receive not only from their mother, but also from their father as well as from grandparents<sup>3</sup>. The WN team was also interested in deepening the understanding of the roles of men and women who were previously analyzed in the doctoral research of Andrew Jones (2010)<sup>4</sup>. In this research, barriers related to limited time available to mothers to improve care practices for infants and young children (CIYC) were identified, under the assumption that improving such care practices was not possible due to agriculture responsibilities (limited time to care for children due to grazing and crop maintenance), lack of family support (limited assistance and support from spouses or a hostile political family), the size of families (many children to care for and lack of control on house roles), to food preparation (limited time to prepare nutritious meals), to geographic isolation (long distances to reach markets and health services) and finally, to degradable physical environments (grazing lands more distant from farms each time)<sup>5</sup>. For the specific case of the lack of family support, Jones' research showed that the obstacles were:

1. Husbands do not help in household chores; care of children is perceived as "women's work".
2. Husbands work as employees or perform reciprocal work outside the communities for long periods during the year.
3. Husbands have abandoned the family or died.
4. Mothers are unassisted and are responsible for their elders/fathers or others and/or sick husbands.
5. Husbands are dominant, unfaithful, disrespectful and/or abusive.
6. Mothers-in-law are dominant, disrespectful and/or abuse their daughters-in-law.

These barriers and obstacles identified in Jones' study were considered risk factors for the achievement of objectives and Project results. That is why it was decided to address the topic of Family support through participatory methods, with focus on research and development incorporating the perspective of both women and men from Northern Potosi. In this sense, the starting point of World Neighbors in the communities was based on the analysis of roles systems for all family members (mother, father, grandmother, grandfather, son, daughter), understanding them collectively.

## Conceptual framework

As it happens in other social structures, in the Northern Potosi, woman and male married have roles and relational status that are necessary to understand and strengthen in order to achieve the mutual support between the two (domestic). The man, woman, grandfather, grandmother, etc. categories are assigned and

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2 Pito are cereals like wheat, corn, barley or roasted and ground rye.

3 Systematization of DS corresponds to a first step comprising the period of March to June 2012, in which it has been identified the position and role of the woman, man and grandparents within the household and the community life that is governed by socio-cultural patterns and economic activities.

4 Andrew Jones 2009-2010 (Cornell University, USA) where certain mothers face barriers to improve infant and child feeding practices were identified (IFPC).

5 Andrew D. Jones et. Al (2010) Heavy agricultural workloads and low crop diversity are strong barriers to improving child feeding practices in the Bolivian Andes; Division of Nutritional Sciences, Cornell University, Ithaca, NY 14853, USA.

**Figure N° 7. Some roles assigned and assumed by men and women considered in the workshops**



learned culturally, consisting of a set of rules or regulations linked at their status. The World Neighbors team has observed that family life, mainly in the couple, there is the concept and practice of duality<sup>6</sup> and complementarity<sup>7</sup>, which means that both male and female are important for marital and family balance.

The fulfillment of these roles reveals the survival of ancestral concepts such as *Chacha-Warmi* (aymara) or *Qhari-Warmi* (Quechua)<sup>8</sup>, in which each component of the couple has a clear awareness of their identity, uniqueness, possibilities and roles of competence in marriage and in the community, characterized by:

- Consciousness of individual identity within the dual body (couple);
- Interactions regulated by the culture (community);
- Tasks and responsibilities shared equitably (roles).

Since childhood, roles are assigned and learned because there is a system of teaching and learning. Generally, it can be seen that girls learn from their mother or grandmothers and boys from their father or grandfathers.<sup>9</sup> This is intended to ensure the success of the person in their marriage and future community life. It has been found that both men and women before marriage dominate their culture's technology in the fields of animal husbandry, agriculture, handicrafts and others, such as tasks required outside the community learned by those who migrate, in the case of males; therefore, they are prepared for the complementarity work that ensures the efficiency needed for the new couple to have a good future life and become active members with rights and duties in the community.<sup>10</sup>

6 The duality in the Andean world, especially in marriage and family consciousness, is the union of two people on equal conditions (Mamani, 1989). At organization level, it can be seen how families above and below; aransaya-urinsaya (Aymara) orpata-ura (Quechua) (Albó, X and Mamani, M. 6 1976:4). Tata-mama (father and mother), achachila-awicha (grandfather and grandmother). In the deities space there are: achachila\_pa-chamama; in rituals are: alcohol (symbolizing the masculine) and vegetal wine (female). Organizationally: men on the right and women on the left, etc. (Mamani Vicenta, 1999).

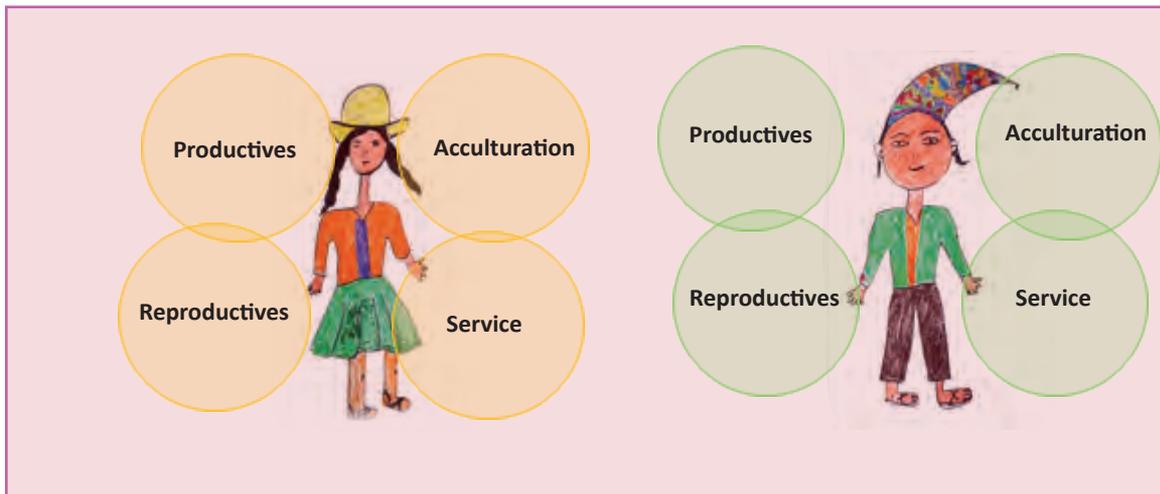
7 For complementarity, it must be understood the idea of a mutual attraction or repulsion which underlies the unit coherence and is based on notion of a matching equivalence (Platt 1988:408).

8 Olivia Harris in her studies of quechua, aymara communities of Northern Potosi, identified that relationships between communities and persons are based on the concepts of duality and complementarity (Cf. Harris, O. 1978:21). On the other hand, it is known that in the Aymara culture, "no one, neither men nor women, acquires the status of adult and whole person socially, if he or she has not been met by the society with his/her partner, completing the unity of the social person jaq'i" (THOA, 1986).

9 From a biological perspective, it translates into Chacha=man;warmi=woman. However, from a socio cultural perspective, it is marriage: The union of two opposing human beings (Hawk 1996:64).

10 Kessel 1992, in Mamani 1999:56, states that complementarity is the strategy to ensure marital success.

Figure N° 8. Main roles of men and women



From individual and collective reflections with women, men, and grandparents in the communities, a tendency has been identified by which roles are grouped into four dimensions of life, including the most commonly assigned and assumed tasks. The sense of duality and complementarity makes the groups of roles similar for both in married life<sup>11</sup>. The roles are: Reproductive, productive, of acculturation and of service.

Generally, the Productive role is understood to be related to fulfilling tasks in agriculture, animal grazing and work within and outside the community for cash or Exchange products. Meanwhile, Reproductive roles relate primarily to the conceiving of sons and daughters and the initial care for their survival<sup>12</sup>. Service roles refer to those tasks that are performed to meet or care for the other, that is, child care by parents, care between spouses and care for grandparents. Finally, the role of acculturation and education has to do with the transmission of culture. This occurs through routine activities where the older generation (fathers-grandfathers) incites, induces and teaches the younger generation (children, grandchildren) modes of thinking and doing in the family and community through a learning experience that is partly conscious and partly unconscious.

### Implementation of the Family Support Process

The team was formed by four researches (two agronomists, a food engineer and an anthropologist), who applied the methodology in the field through two means: The community workshop and the Family Backstopping.

By using participatory methods, monthly workshops and field support were carried out to reflect collectively on the roles and family support in the five communities: Camacachi, Alta Ticanoma 1, Chacoma, Cayastia and Lancaya during the period March to June 2012, with the participation of mothers, fathers and grandparents. Some of the most important questions for the family support dialogue were:

- What are our roles in the community as we are male or female?

<sup>11</sup> In the case of the Aymara and Quechua peoples, chacha-warmi is a model and cultural principle that establishes equal conditions between women and men, in the hierarchy remains in both components and not just for men. In the relations Aymara and Quechua there is no differentiation; the woman is placed in the same category as men, both components on the same 'level', where everyone holds their roles, being both essential parts in the chacha-warmi. Hence decisions are shared between the two components. This can be exemplified when there are unclear or vague answers of the Aymara people against any question or decision to make; This is because the subject was not dealt within the marriage or familiar, emerging the following phrases: "What will she say", "What will he say", "I do not know what to do", "how it will be", etc. For the Aymara people these would be like vague, uncertain phrases, however, for the Aymara people it means the absence of its counterpart. (Mamani 1989).

<sup>12</sup> Marvin Harris (2001) when speaking about the cultural definition of masculinity and femininity, he indicates that within a given society, there are personality differences between men and women determined by anatomical characteristics and male and female reproductive roles that predestine them to have personalities fundamentally different; and that these differences are given in each culture according to pressures that societies might be experiencing (Harris, 2001).

Figure N° 9. Main roles of men and women

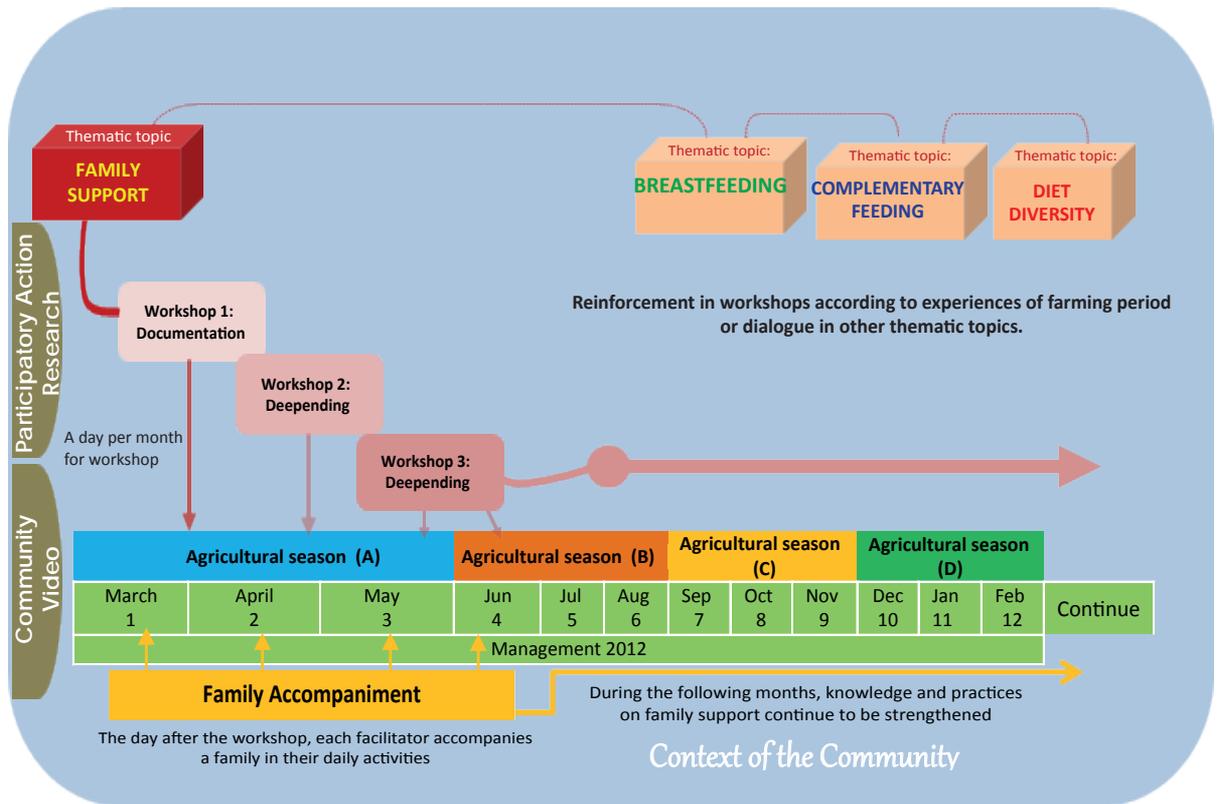


Table N° 22. Participants in documentation and deepening workshops on Family Support

Name of workshop	Mothers		Fathers		Total	
	Number	%	Number	%	Number	%
<b>Documentation of perceptions</b>	52	72%	20	28%	72	100%
<b>Deepening 1</b>	38	42%	52	58%	90	100%
<b>Deepening 2</b>	45	54%	39	46%	84	100%
<b>Family Backstopping</b>	4	50%	4	50%	8	100%

Source: World Neighbors, visualized and documented material, 2012.

**Figure N° 10. The most significant tasks performed by women in the context of her roles**



Source. World Neighbors, visualized and documented material, 2012.

- Have these roles changed?, how they were before and how are they now?
- How to achieve that all be happy in the family?
- What we found and what we learned from family support?

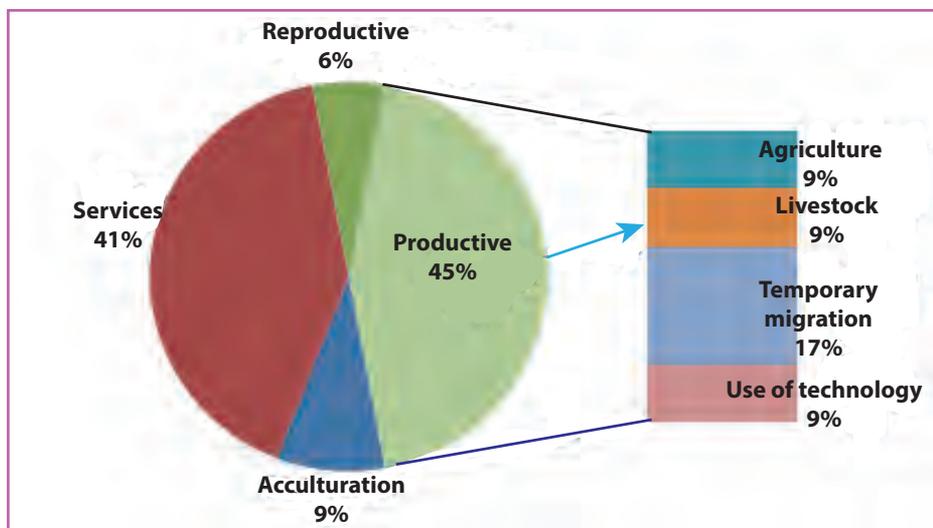
In the workshops also participated about three to six elders from each community. Similarly, from the total of participant parents, almost 45% had children under the age of 5 years.

## Findings on Family support

### Women, her main roles and tasks

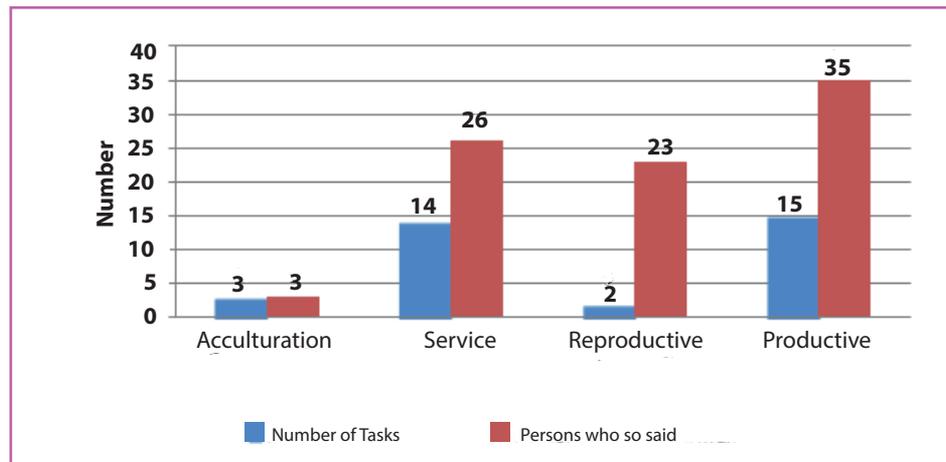
In the three community workshops and days of accompaniment carried out in communities, around

**Figure N° 11. Distribution of culturally assigned tasks and / or assumed by male**



Source: World Neighbors, visualized and documented material, 2012.

**Figure N° 12. Number of tasks assigned / assumed by the males in relation to the opinion of themselves**



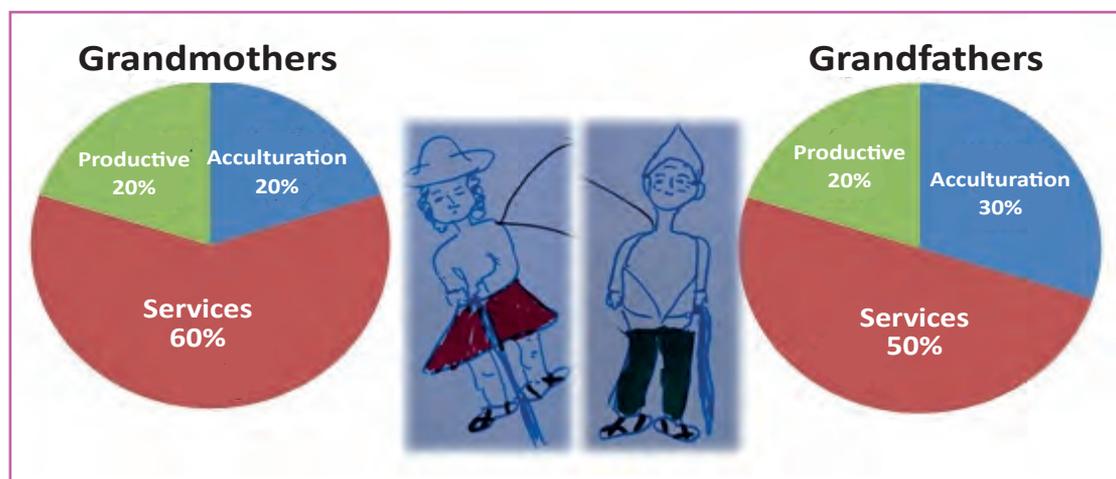
Source: World Neighbors, visualized and documented material, 2012..

30 specific tasks (in different seasons) have been identified in a participatory manner that show women's contribution to family work and the support she gives her husband, her sons, daughters, grandparents, in the framework of her most important roles.

As a result of the grouping of the tasks performed by men, it can be seen that 45% of these are related to the productive role, which in turn can be subdivided into groups of tasks, in this case the ones related to agriculture and food production, which occupies 9% of productive tasks; livestock encompasses another 9%; temporary migration to make money doing masonry work, longshoreman's work, coca crop harvesting or other work in cities like Oruro, Llallagua, Cochabamba and the Tropical Region of Cochabamba (Chapare); as well as technology-based work such as manufacturing and/or handling of plows, yokes, construction of housing, which comprise another 9% of the tasks in the productive role (see figure N° 11).

In the service role, there are tasks that they handle at the school occasionally, such as performing certain work or attending meetings when called by the teachers, but also the tasks of taking sick children to health centers or traditional doctors, loading wood that the mothers use for cooking the meals and others.

**Figure No. 13. Grouping of the main tasks of grandparents in the context of their roles**



Source: World Neighbors, visualized and documented material, 2012.

The male also has tasks or opportunities to fulfill in the role of acculturation of his children, at times when performing his duties within or outside the home (except for migration, where he goes alone). The man's reproductive role is limited mainly to the initiative of household formation and procreation based on a marital relationship; there is a perception that the role they fulfill ensures the survival of the community and its customs.

The graphic (figure N° 13) reveals the emphasis that men placed on identifying their tasks according to the roles they play in the family: tasks or occupations in the Productive role, followed by the service role, were largely supported

## Grandfathers and Grandmothers, roles and principal task

In the case of grandmothers and grandfathers, it is found that the main roles are Acculturation and Services; to a lesser extent, they maintain Productive tasks. At a certain age, women cease to play a Reproductive role, although in males, in some cases, this role remains.

Among the tasks of Acculturation, participants frequently quote their counseling work as it applies to their own families: sons and daughters and mainly grandchildren. These tips involve advice and help to adequately perform everyday tasks and make important decisions; that is, they can provide guidance on when to plant, what variety of seed, how to react to a marital conflict, how to educate and transmit culture to the children, etc.

The role of Service that occupies much of the work of grandmothers and grandfathers refers primarily to the care of young children in the house, preparing homemade and traditional medicines, the collaboration with mothers or fathers in terms of grazing animals at places that are nearby and are easy to handle at their age, among others.

By implementing this thematic topic, we now have a greater understanding of the role system that exists in communities; also, the participants have assumed the importance of family support, and therefore, the need to assume daily practices to improve the existing level of family support and guide it towards family and child feeding

## From the woman's perspective

For women, the care of young children is necessarily their task; women say that it corresponds to them within their Reproductive Service Role.

*"Women are always in charge of the wawa (child), when they cry, they just calm them with their breast. For this reason, it is not possible for men to be in charge of a small child as they (men) do not know how to calm them when they are crying"* (Women of the Cavatia Community).

Women assume that fulfillment of their tasks and roles have emotional revenues, therefore they are not so concerned about the workload, but rather focus more on emotional aspects such as being with the husband and having him value their effort. They, in turn, do value the efforts of their spouses.

Women recognize male leadership at home. They feel that family harmony is determined by the man's mood; that is why women delay any discussion regarding marital issues for a propitious moment.

## From the man's perspective

Males assume that their role in the care of young children is fulfilled by their work in providing food. Generally, males understand that special care, like the beginning of Complementary Feeding and during illness, is a maternal role.

The male demands family support. When there are more children or dependents they feel greater pressure to provide food, especially when these dependents are younger or older and have place significant

demand on the father as provider; in these cases, mothers show a great deal of solidarity with their husbands.

Males also seek approval; they, like women, expect an attitude of approval from their wife (and other community members) in the performance of their roles that have to do with the duality and complementarity logic.

### From the grandmothers' and grandfathers' perspective

Grandparents emphasize the experience based on community and/or cultural values and principles; they are known as effective transmitters of culture to children and enjoy the credibility of adult men and women who also require the fulfillment of tasks and roles for marital and family harmony.

## Results

According to data obtained in the final evaluation survey in June 2013, 100% of parents think that the support in playing the roles assigned to them by the community is not enough to improve their children's nutrition. They also need to perform specific tasks such as caring for children and having knowledge of good feeding practices and the future consequences of not feeding children well.

On the other hand, mothers report that their husbands have improved in specific tasks such as the care and feeding of children, for example, 77% of mothers say their husbands have improved their home support over the last year; 100% of the mothers expressed that their husbands have improved by bringing various and nutritious food home and supporting during the preparation of nutritious meals; 84% improved their support during breastfeeding and 87% did so during the complementary feeding by feeding the child and giving preference to their food.

Finally, it can be said that 90% of parents report that they were never involved in food issues and now believe it is important to know how to feed children well.

## Conclusions and learning

### Family Support: The basis for improving food

Family support, although it is related to the principles of Andean duality and complementarity that persist in the communities of Northern Potosi, is a complex issue that should continue to be better comprehended through research and development with communities.

However, during the process described, it has been shown that addressing the topic of Family support, led couple's and community members to dialogue about the identification of roles, **achieving a collective understanding that good food family nutrition and particularly infant feeding, depend not only on the mother but also on the father and other family members** (grandparents and older brothers). Additionally, it has been possible to reflect on how mutual support and family solidarity are able to generate well-being and satisfaction for all within a socio-cultural context where the practice and experience of duality and complementarity survive from ancient times.

It has been observed that each family member has a defined role that the WN team sought to utilize to generate greater mutual support between them. In general, feeding and caring for young children (under 2 years), is a role assigned and assumed by the mother, while the father assumes the role of provider of food and transmitter of the local culture, as do the grandparents. Grandparents also have the role of caring for young children while their parents are busy in intense days of work, as in the times of planting and harvesting. Arguably, the roles are learned in a cultural process that has to do with the greater plan of subsistence and family prosperity. In this endeavor the roles are assumed from a complementarity point of view and when one of them cannot perform it.

Women tend to value highly the work of their husbands but do not feel that their work is valued by them; this confirms the idiosyncrasies of the northern Potosi communities characterized by strong male dominance.

The participatory methods and approaches to family work, have generated more opportunities for reflection on household members; joint participation of parents in workshops encouraged the exchange of knowledge and ideas between all involved, which means they can listen and learn from the mother, father, grandparents and from the scientific knowledge imparted. For participants, this process meant the revaluing of their skills as the basis for building the new knowledge, which is adjusted according to the actual conditions of those who apply.

According to Andrew Jones' studies, mothers' barriers to improving feeding practices had to do with the fact that they felt alone in their efforts to care for the child, noticed the absence and lack of husband and therefore they did not feel free to make changes; however, now results show changes in the attitude of the spouses; they think it is not enough to provide food for their children to grow up healthy but that they should know what foods provide further support to the wife in concrete tasks of feeding children. Many of the decisions of what to plant and what to buy, are made by the father and having no knowledge about nutritious food, they bought what would be easiest to consume without knowing whether or not to help feed their children. Fathers are the closest actors to mothers in all respects, even more than the mother-in-law; during the birth of the child, are the ones who receive the baby. Without the close involvement of the father, mother can hardly make changes to any aspect of maintaining family harmony.

They both know that it depends on mutual support for children to grow well, not only fulfilling their specific roles but getting more involved in knowledge and practice of good nutritional care of the family.

The meeting point between the communities and the project was the interest of parents and the WN team to feed children well; to involve more members of the family, especially the father, also increased the chances of sustainability of achievements. Finally, understanding these roles has allowed the communities and the Project to find joint solutions and identify opportunities needed to improve family nutrition; WN has focused on involving the male-parents more in action learning processes in food subjects and care of young children, as it has been seen, that this strategy resulted in changes that are improving the lives of families. This has meant a major change of the team, for the implementation of this project.



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al niño iniciar la  
lactancia a tiempo?  
Alicia Moria



Segment N° 3

**BREASTFEEDING**

**ÑUÑUCHINCHI Q SUMAJ KAWSANANPAQ**  
**GIVING BREASTFEEDING TO LIVE WELL**

# Background

For a long time, in the communities of Northern Potosi, there have been both adequate and inadequate breastfeeding practices. Some of the practices that were identified as inadequate during the workshops include: the elimination of colostrum, the delay of starting breastfeeding between 1 and 7 days, the feeding of urine to the newborns, and the initiation of Complementary Feeding around four months or earlier. During the time that the WN team worked with mothers and grandmothers of the families, it was felt that they were not given to newborns “*corta Ñuñu*” or colostrum because it was believed that it activated the baby’s hunger, which was considered negative as then throughout life, the child would be constantly worried about would be much hungrier “*mikhuyllat reparanqa*”; thus, by eliminating the colostrum, infants were being prepared to be resistant to hunger.<sup>1</sup>

The practice applied mainly to male babies. The main justification is that men as part of their roles migrated, and still do, to large towns or cities walking long distances, which means to be hungry for several days. A related aspect was the shortage of food in those days when living in more remote locations running away from pongueaje<sup>2</sup> and abuse of employers called “*k’aras*”<sup>3</sup>. The intensity of the cold, the low production, poor access to land and the persecution of “Indians” only allowed them to grow potatoes and barley, and therefore, generating resilience to childhood hunger could have been necessary<sup>4</sup>.

According to Jose Ramos (42 years old) and his brother René (33 years old), the latter, a former mayor of the Lancaya community, the practice of eliminating colostrum and delaying breastfeeding have been effective in his own life. Jose claimed to have resistance to hunger for two to three days and says that this is very beneficial to him, as he can be in town looking for work or walking days without feeling hungry, just chewing coca leaves. Although, he also said that he does not have a good memory for study. In the community of Cayastía, a story was shared related to the elimination of colostrum noting that “employers told (misled) grandparents that colostrum is bad for babies.” They believe that this was done in order for them not to “reach” their level in intelligence or “*Yuyay*”.

It was also noted that the delay of newborn breastfeeding for a day or more is related to delivery conditions, that is, whether the mother gives birth at home or in the field in times of cattle grazing. Similarly it depends on who helps the mother during birth at home, if she is alone, if she is with her spouse or if she has several small children that require attention; and finally, with childbirth and postpartum complications to determine the order of priority in which breastfeeding is placed.

Giving drops or small teaspoons of urine to newborns before receiving breastfeeding is another old-time practice that, according to the workshop participants, was due to the belief that the urine, as the first liquid received by the newborn, helped to clean the stomach of the newborn (“*wisata pichananpaq*”), in addition to avoiding stomach pain during their lifetime (“*mana wisa nanayniyuq kananpaq*”)<sup>6</sup>. Today, people use urine as a medicine to calm stomach pains in both children and adults.

*“We gave my brother only urine for a week and he calmly survived.”* Ferminia Jaillita, Camacachi community.

Another old practice that continues today is extended breastfeeding, which also serves to space pregnancies. Most mothers tend to breastfeed their children up to three<sup>7</sup> years, as long as they do not get pregnant at that time.

1 Excerpted from workshops dialogue workshops.

2 Pongueaje is the service that natives who have no property or assets are obliged to provide to the employer, Collins Dictionaries.

3 Story of Teresa Colque, 65, Chacoma community.

4 Story of Domingo Ramos, 72, Lancaya community.

5 Fabian Montano, 28, Cayastía community.

6 Story of the mothers who participated in the development of Breastfeeding video

7 Story of Juana Mamani, 60, AltaTicanoma community 1 and René Ramos, 33, Lancaya community.

Moreover, the rural communities of Northern Potosí form part of the Andean culture whose worldview contains a set of wealth and cultural knowledge transmitted from generation to generation to the present. Birth and breastfeeding also contain a mixture of cultural practices and those transferred by health personnel. Some of them are inadequate, as was identified in Yesmina Cruz' study (World Neighbors, 2008), covering 30 communities of Northern Potosí. The study demonstrated that 38% of mothers initiated breastfeeding after 12 hours; that 90% of infants received complementary feeding at around four months of age and therefore less than 20% of children had exclusive breastfeeding until 6 months.<sup>8</sup> According to the World Health Organization, it is urgent to support and protect breastfeeding and good complementary feeding practices, as BF is the ideal way of providing young children the nutrients they need for healthy growth and development; colostrum is recommended as the perfect food for the newborn and its administration should begin within the first hour of life. When maternal milk is no longer sufficient to meet the nutritional needs of infants, about six months old, Complementary Feeding should be added to their diet. The transition from exclusive breastfeeding to the complementary diet, which generally covers the period from 6 to 18 to 24 months and is a period of great vulnerability, in which malnutrition begins for many children.

Many children are not fed as recommended because the information about how to feed comes from the wrong family or community practices or beliefs.<sup>9</sup> In fact, during the participatory workshops, local knowledge about breastfeeding that goes against medical recommendations, such as elimination of colostrum, the delay in breastfeeding initiation for a day or more and providing of urine emerged during this time.

In contrast, there was the need to reflect with mothers, fathers, and grandparents of the five communities, on the knowledge and practices of breastfeeding, to build beneficial knowledge and identify those practices that would lead to successful breastfeeding, focused on good nutrition and achieving the purposes that families have for children.

## Conceptual Framework

Breastfeeding in Bolivia is a priority of the State, expressed in Law No. 3460 Breastfeeding Promotion and Marketing of Its Substitutes, effective since 2006 and based on the fact that Bolivia has one of the highest rates of infant malnutrition in Latin America. According to the Pan American Health Organization, in Bolivia six out of ten children are breastfed exclusively and prolonged breastfeeding occurs for 18.8 months on average. For this reason, it seeks to promote immediate breastfeeding (during the first hour of life), quality complementary feeding from the age of six months and extended breastfeeding until at least age two.<sup>10</sup>

Meanwhile, the Ministry of Health and Sports coinciding with lactation studies, says that maternal milk provides ideal nutrients that babies need, such as vitamins, minerals and fluids, improving nutritional status and reducing the morbidity of five years children and mothers.

However, according to the summary of lessons on child nutrition in agricultural projects funded by the McKnight Foundation in Peru, Ecuador and Bolivia, it is assumed that the rural child malnutrition in developing countries (Peru, Ecuador and Bolivia) is due to the influence of a complex set of factors including production, standards and socio cultural patterns and environment.<sup>11</sup>

Breastfeeding is also affected by subjective factors, as shown in the study of Ninfa Chavez (2006), which reveals that postpartum mothers feel “open” and may be at risk that “something will enter in their insides and can generate any complications”.<sup>12</sup> Study: “Cultural factors preventing delivery assistance.....” 2006.

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8 Cruz, Y. et al. Breastfeeding, Complementary Feeding and child malnutrition in the Andes of Bolivia; Latin American Archives of Nutrition; Vol. 60 No. 1, 2010.

9 Council for Infant and Young Child; World Health Organization, 2009.

10 Data on the speech of Dr. Mirta Roses Periago; Director General of OPS /OMS, on the occasion of the 10th. Anniversary of the Global Strategy for Infant and Young Child Feeding. La Paz - Bolivia, August 28 celebration of the World Breastfeeding Week

11 Berti.P. Bezner-Kerr, R., Creed H., Cruz, Y., Jones, A., Nicklin, C., Omonte, M., Perez, M., Scurrell, M., 2012. What we know about interventions in agriculture to improve child nutrition. Collaborative Crop Research Program. McKnight Foundation.

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To this end, the following advantages of Breastfeeding were established for the project:

### Breastfeeding advantages<sup>13</sup>

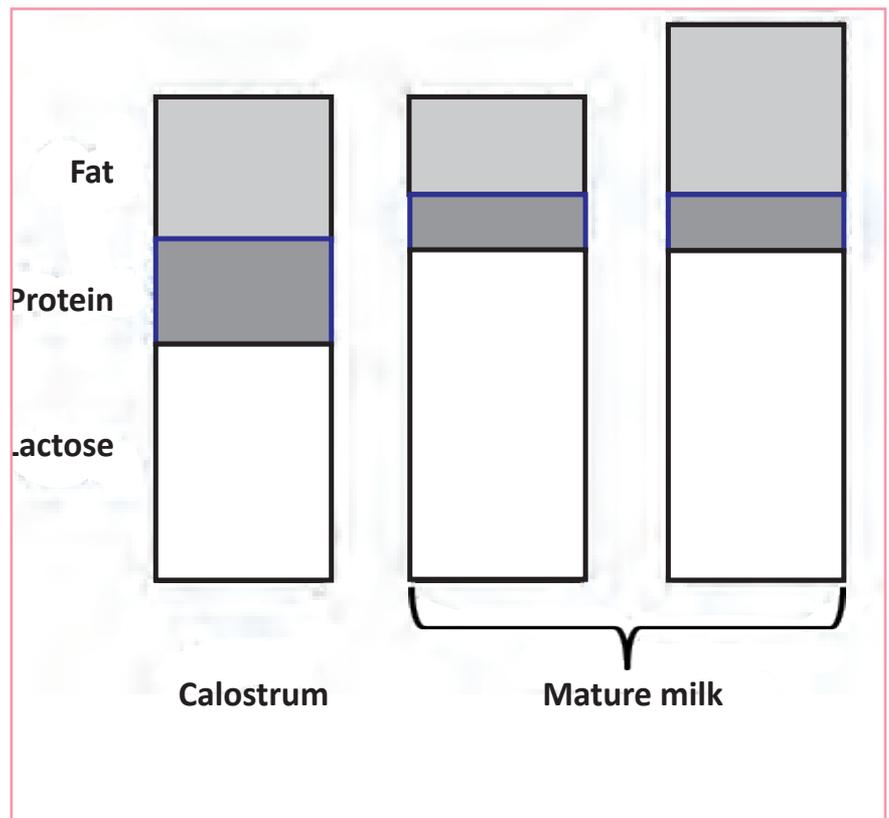
- ✓ Perfect nutrients;
- ✓ Easy to digest, and efficient use;
- ✓ Protects against infections;
- ✓ Help the mother-child relationship and its development;



- ✓ Help delay a new pregnancy;
- ✓ Protects the health of the mother;
- ✓ Costs less than artificial milk and is accessible.

Breastfeeding during the first six months of life of the wawa is essential for his/her normal growth and intellectual development, because breast milk contains fat that provides energy, protein<sup>14</sup> for growth as well as natural sugar, called lactose. It also contains essential fatty acids that are needed for brain growth and vision, as well as for the healthy development of blood vessels. The cells in breast milk and antimicrobial factors play an important role in protecting the gastrointestinal system; meanwhile enzymes, antioxidants and cell components improve the defenses in the neonate.

The composition of breast milk varies somewhat over time. The figure shows the difference between colostrum and the initial mature milk (which comes with early lactation) and at the end (which comes with the latest ones). Colostrum contains more antibodies and anti-infectious elements than mature milk proteins and more white blood cells that help prevent bacterial infections and provides the first immunization against many diseases which the infant must face. Therefore, consumption of colostrum is justified by the following aspects:



<sup>13</sup>IAIEPINut Technical Bases - Bolivia 2007.

<sup>14</sup> The animal milk (cow or goat) contains more protein than human milk. For infant's immature kidneys is difficult to excrete the additional burden of protein, which is in the form of casein. This forms thick curds that cannot be digested in the stomach of the baby.

### Properties

- Rich in antibodies
- Many white blood cells
- Purging
- Growth factors
- Rich in vitamin A

### Importance

- Protects against allergies and infections
- Clean meconium
- Prevents newborn jaundice
- Helps to intestine maturation
- Reduce the severity of

### Some diseases that prevents:<sup>15</sup>

#### Virus:

- Herpes simplex vir
- Rotavirus
- Rubella
- *Streptococcus pneumoniae*

#### Bacteria:

- *Escherichia coli enteropatogénica*
- *Shigella*
- *Vibrión cholerae*

#### Full toxins:

- Levels of toxin
- *Echerichia coli*
- Toxin Shigella I

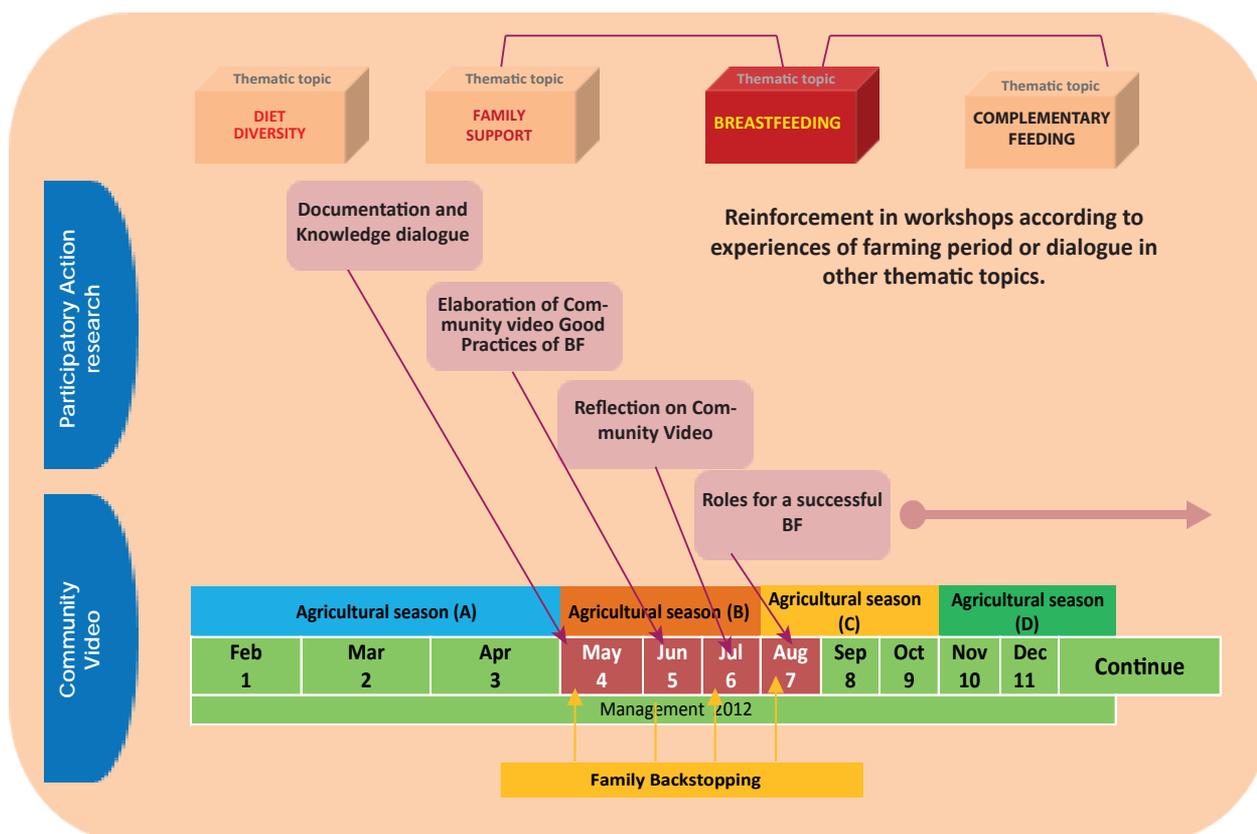
#### Fungi and Protozoa:

- *Candida albicans*
- *Emtamoeba histolytica*
- *Giardia lamblia*
- *Trichonoma vaginalis*

While rotavirus is the most common cause of diarrhea in children, dysenteric diarrhea produced by *shigella* can cause 15% of deaths<sup>16</sup> and is the leading cause of infant mortality<sup>17</sup>. Therefore, breastfeeding should be promoted as a feeding and prevention practice.

While rotavirus is the most common cause of diarrhea in children, dysenteric diarrhea produced by *shigella* can cause 15% of deaths, being the leading cause of infant mortality. Therefore, breastfeeding should be promoted as a feeding practice and prevention.

Figure N° 14. Cycle research – workshops and backstopping action



Fuente: Vecinos Mundiales, material visualizado y documentado, 2012.

15 World Health Organization. Guidelines for the control of shigellosis including epidemics due *Shigella dysenteriae* type 1. 2005.

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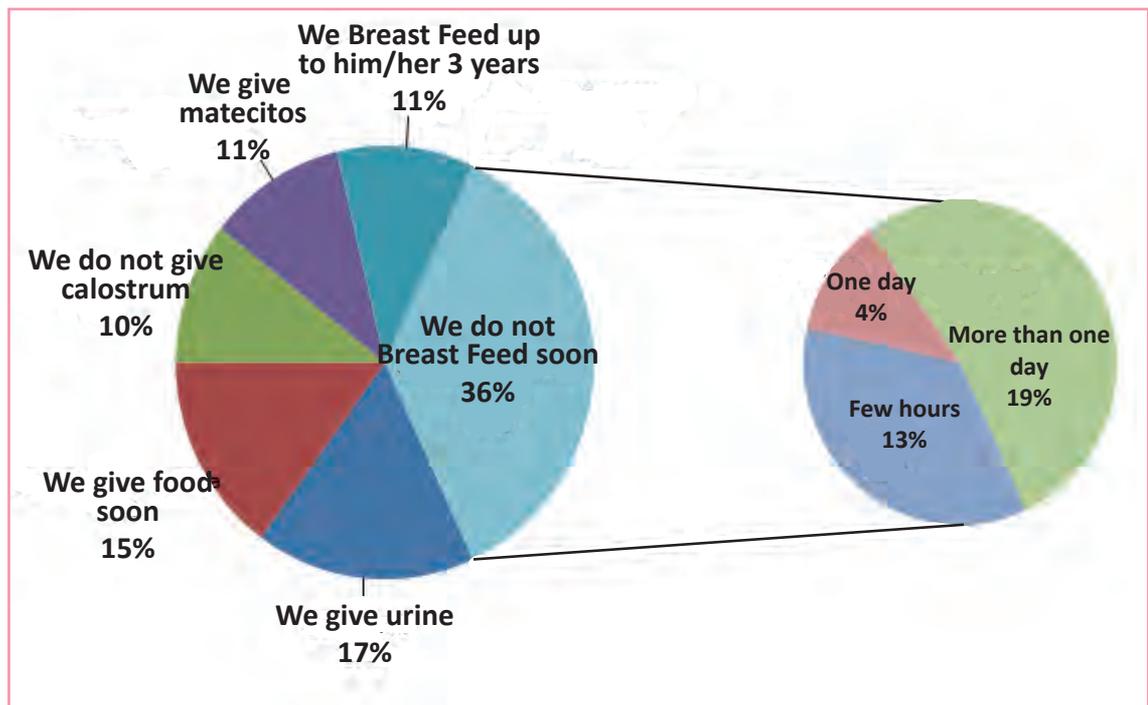
## Implementation Process

The process of research and development on breastfeeding was implemented between May and August 2012 through community workshops and participatory methods with monthly visits of family accompaniment. The average attendance was 103 families of which 80 had children under five.

Four workshops were held in each community, one per month with a duration of four hours approximately, which when added to the waiting time and collective snack, involved a whole day, followed by accompaniment to the family the next day.

The accompaniment complemented the knowledge building process. It offered the opportunity to provide new information and generate trust between the team and families, as people that in the workshops had no active participation, talked and reflected intensely when accompanied for a whole day by the facilitator, who helped in household chores or on the farm. This support allowed deeper dialogue and learning on the subject developed in the previous workshop.

**Figure No. 15. Quantification of opinions about PRIOR PRACTICES in Breast Feeding**



Source: World Neighbors, visualized and documented material, 2012

In workshops and backstopping, brainstorming sessions were held with participatory methods: Participatory Action Research and Community Video.

## Findings in the process

As a result of knowledge exchange between communities and the project team it has been found a number of elements that promote and / or limit breastfeeding. Identify initials understanding, "Prior practice" was important to influence in the improvement of breastfeeding. Therefore, practices such as urine dosage or delayed lactation, are subjects that were raised as part of the review process.

18 Breastfeeding is one of the four thematic topics of the project: Family support, Complementary Feeding and Diet Diversity.

Prior practices:	The reasons why these were done in that way:
“We do not breastfeed soon”	Mother was attended first, to avoid complications or death; The newborns were prepared to be resistant to hunger and “non-eaters”. First, they were given urine or matecitos to prevent having stomach aches in their life, since before there were no health centers where attending.
“We gave urine”.	Avoid immediate stomach pains and during the child life. It was believed that urine protects from diseases like cough and indigestion also to strengthen child’s body before receiving food.
“We did not give colostrums”	Breastfeeding is delayed to prevent children from being at that time eaters.
“We gave matecitos”	Prepare the newborn’s stomach to prevent future pain
“We gave food soon”	Mother’s milk gets dried; The wawas want to eat; The wawas grow faster.
“We gave breastfeed up to his/her years”	The wawa has to be breastfeed and eat to be strong. It was a way to prevent pregnancies

According to workshop participants, prior practices were defined as those practices that were performed in their grandmothers’ times, although some participants also assumed that meant what they did with their older children. What is peculiar in these reviews is that most people have a “fresh” knowledge of these “old” practices and these are spontaneously manifested, which suggests that there are important reasons to have been given these breastfeeding practices at the time of their grandmothers and some remain so to date.

Regarding the “prior practices,” such as giving urine and not giving colostrum, most mothers claimed to know that these are not recommended practices and that, in recent years, they have received guidance on this topic from health personnel and projects; however, prior practices still remain due to the lack of reflection and appropriation of the importance of breastfeeding for nutrition and the life of the girl and boy. Many mothers were indifferent to the benefits of colostrum, which then changed after nutritional information was shared and reflected, leading to a dialogue between local knowledge and scientific knowledge.



It was possible to confirm that the exploration of prior practices and the exchange of knowledge allowed some young women and men to learn what was practiced in the past, something that helped them to reflect on whether the

practices now are being according to the project and health personnel’s recommendations, particularly in relation to colostrum consumption.

The best practices for successful breastfeeding were determined with the participants in the workshops and accompaniment visits. In these, the facilitators provided new scientific information and knowledge about the importance of breastfeeding, integrating traditional knowledge of communities. That was how they identified the three most important reasons to breastfeed, which are summarized in the following table:

**Table No° 23. Expected changes in boys and girls achieving successful Breast Feeding**

Dimensions of the person	What it means in their life
<b>Yuyay</b>	<ul style="list-style-type: none"> <li>- Proper brain development; Well breastfed kids can take advantage of all learning opportunities in school and life more easily; In community and family they will help to provide better solutions;</li> <li>- In their life, they will reach more goals than their parents.</li> </ul>
<b>Wiñay</b>	<ul style="list-style-type: none"> <li>- They will grow healthy without too sick;</li> <li>- They will grow well and will have good weight.</li> </ul>
<b>Kallpa</b>	<ul style="list-style-type: none"> <li>- They can have the strength required for any work, mainly fieldwork.</li> </ul>

Source: World Neighbors, participatory workshops on breastfeeding, 2012.

**Table N° 24. Agreements with parents and their ownership of the practices needed to achieve successful breastfeeding**

Stages of lactation:	Practices that we should do:
<b>Give lactation early</b>	<ul style="list-style-type: none"> <li>• One the wawa born, and after bathing, we give "ñuñu cut", colostrums, to have strength;</li> </ul>
<b>Breastfeed all the time, especially until one year old,</b>	<ul style="list-style-type: none"> <li>• We give breastfeed day and night;</li> </ul>
	<ul style="list-style-type: none"> <li>• Breastfeeding must be from time to time;</li> </ul>
	<ul style="list-style-type: none"> <li>• Give milk every time the newborn asks or cries.</li> </ul>
<b>Breastfeeding only.</b>	<ul style="list-style-type: none"> <li>• At least up to six months, we must breastfeed and then nutritious meals.</li> </ul>
<b>BF until the child grows up</b>	<ul style="list-style-type: none"> <li>• Give milk to 3 years old to be healthy and strong.</li> </ul>
<b>Recommendations.</b>	<ul style="list-style-type: none"> <li>• Until his first year, the child can be breastfed lying and then standing;</li> </ul>
	<ul style="list-style-type: none"> <li>• We must grab the wawa head so that he/she can be facing the breast and does not have problems to grab the teat;</li> </ul>
	<ul style="list-style-type: none"> <li>• In order to having milk, mothers should eat nutritious food;</li> </ul>
	<ul style="list-style-type: none"> <li>• Take the child to the clinic to vaccinate him/her or when sick.</li> </ul>

Source: World Neighbors, participatory workshops on breastfeeding, 2012.

Breastfeeding facilitators		Breastfeeding limiting	
Midwives help prevent complications and provide guidance to parents about breastfeeding and newborn care.	<b>Midwives</b>	<b>Inexperience of young couple</b>	Before the first child, the woman and the male have not received orientation, nor have they spoken about breastfeeding. They learn by experience
The husband is aware of woman roles and he “remove” tasks to her or support when she is breastfeeding.	<b>Family support</b>	<b>Belief that foods make child grows fast</b>	Many women believe that giving food since child are very little is justified because <i>wawas</i> do want to eat and can grow faster.
Provide new information motivates and builds confidence in mothers, for example, the process of formation of breast milk, effects on intellectual development, health and others.	<b>New information</b>	<b>Mother working conditions</b>	At the time of planting and harvesting, the mother has much work to do, and prefer small <i>wawas</i> stay asleep.
Help parents to understand that breastfeeding often help prevent immediate pregnancies.	<b>Other benefits</b>	<b>Complications homebirth</b>	Some women take more than two hours to deliver the placenta, at that time, the <i>wawa</i> does not come to his/her mother to take breastfeed.
Sharing parent’s experiences, either in workshops or video on the benefits or early and prolonged breastfeeding, help maintain confidence and positive attitude of parents.	<b>Testimonies</b>	<b>Distance of health centers</b>	In homebirth, complications affecting the initiation of breastfeeding can occur because the newborn is often underserved as the priority is the mother vulnerability.
Provide mothers and fathers with printed materials or video to make them remember the good practices that help maintaining confidence in the practices learned.	<b>Reminders</b>	<b>Influence of prior practices</b>	There are women who still take into account the recommendations of grandmothers, including the delay of breastfeeding delay in order to prevent the child from becoming a big eater.

These practices, considered to be the ones that will allow for successful breastfeeding, have been reflected on and assumed with conviction. The participants have also identified factors that will allow them to keep their knowledge and best practices on breastfeeding.

- “We want to know about the best nutritious food, so we can better feed ourselves.”
- “They would teach us more about Breastfeeding.”
- “We should breastfeed and apply what we have learned.”
- “Fathers also need to know about good food to buy nutritious food.”

To this end, it was necessary to provide another workshop on micronutrients and their roles in child’s growth, and to continue supporting mothers and fathers, including the youngest ones, with new information about the benefits of breastfeeding.

## Facilitating and impeding factors of breastfeeding in the communities

With the analysis of the information collected in the workshops and accompaniment, some factors that tend to be facilitators of or barriers to successful breastfeeding were identified.

*“Now I just feed my baby 3 times a day and 2 at night because when she is asleep, I do not want her waking up because I have more time to do other work. Besides, my mom gets mad at me because I give more attention to my daughter: that is why I let her sleep more, I am also afraid to ask other women because they can criticize me.”* Gabina, Alta Ticanoma community 1.

## Results of the process

In terms of fathers'/males' knowledge of breastfeeding, 83% of them now know they should start breastfeeding within half an hour after the baby is born and 88% know that breastfeeding should be given exclusively up to six months. Early in the Project, their knowledge on this topic was limited or nonexistent.

In June 2013, 24 mothers with children under one year were surveyed, as they were the ones who had the opportunity to apply the knowledge gained in the last year. It is possible to note that currently, 65% of mothers, compared to 37% in 2010, began breastfeeding before the first half hour; approximately 82%, compared to 13% in 2010, have given exclusive breastfeeding up to 6 months. It is worth mentioning that the project achieved more than expected, because at the beginning of the project, it was projected that mothers could give exclusive breastfeeding until at least four months of age. Finally, 75% of the mothers currently gave frequent breastfeeding to the child under one year versus 19% in 2010.

It can be confirmed that the project has met the goals outlined in the breastfeeding area, with participants understanding and reflecting on local practices, and reinforcing and complementing the good practices.

## Conclusions and Learning

### Towards a Successful Breastfeeding

It has been verified that there is ancient knowledge among participants about giving urine and waiting hours or days before breastfeeding the newborn. Joint reflection with the community allowed participants to understand that such knowledge is the knowledge of grandmothers and grandfathers and somehow it continues to be applied in some households where the influence of grandmothers is very strong. Grandmothers believe that giving droplets of urine prevents stomachaches in childhood and life, a key prevention aspect, since until recently there were no health centers close to communities where they could find care and medications for stomach pain. Also, the delay and elimination of colostrum evolved, because for grandmothers, this allowed children, especially boys, to acquire resistance to hunger. These practices are justified by the need to control hunger and physical resistance in a context of food shortages. For example, 60 years ago, in what is now the community of Lancaya (4,065 m) the only crop that could be produced at the time was a special variety of cold-resistant potato and, although this is changing, grandmothers' knowledge remains.

Breastfeeding, while being a natural process rooted in the community context, is linked to socio-cultural factors. It is therefore essential to reflect on it from people's conceptions of it so that improved practices can be authentic and contextualized to the social, environmental and cultural reality.

From the set of participatory reflections, three reasons why the practice of breastfeeding is important were identified: i) it contributes to intelligence or “Yuyay”, because it ensures proper brain development and therefore aids children's success in school and in life as well as their contribution to communities as people who provide solutions: characteristics that are highly valued by the communities; ii) it contributes to growth or “Wiñay” which is reflected in the size, weight and overall health of children; and finally, iii) it contributes

to the strength or “*Kallpa*” required for any work, primarily for agricultural work.

In workshops and family accompaniment visits, different terms are used to identify the stages of breastfeeding, such as: “give very soon breastfeeding,” which means “immediate breastfeeding”; “Breastfeeding all the time to the little ones” refers to “breastfeeding on demand”; “Breastfeed only” relates to “exclusive breastfeeding up to six months”; and “breastfeed until the baby becomes a child” which refers to “prolonged breastfeeding”. For this reason, it is considered that this way of focusing on what people think and are willing to do from the new information provided, is legitimate and appropriate to secure good practices.

The use of participatory methods such as PAR, the PPV and CV through workshops and visits has been confirmed to have helped in the process of promoting the improvement of breastfeeding practices. Particularly, the CV was very useful as it allowed participants to reflect based on their knowledge and perceptions on the subject, capture the whole process and the valuable work the participants are capable of carrying out and, finally, internalize and establish the new knowledge and best practices in the memory of people. To fix memory and promote active practice, the Project complemented the process with the delivery of the video produced and a booklet of photographs and drawings with key messages for the four thematic topics addressed.

In recent years, and through various World Neighbors’ projects implemented in the area, one can observe how mothers’ and fathers’ breastfeeding knowledge and practices have been changing. By amicably rescuing and reflecting on local knowledge together, mothers, fathers, and grandparents learn to value good breastfeeding practices, to question and discuss inadequate practices, and also, to accept the new practices, the fruit of knowledge dialogue, with greater faith. At the World Neighbors team level, it has been possible to learn about and understand the reasons for past and present practices.

As a conclusion, it is very important to understand the socio-cultural, economic and political dynamics of communities and facilitate opportunities and the processes so that community members are the ones who seek their own best solutions to their problems. This is the only way to ensure the sustainability of results achieved in families who assume the knowledge generated as their own and prioritize practices.



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Segment N° 4

## COMPLEMENTARY FEEDING

**SUMAQ MIKHUNA YUYAYTA QON WAWAMAN**

**GOOD NUTRITION DEVELOPS THE CHILD'S INTELLIGENCE**

# Background

The Ministry of Health of Bolivia recognizes that the main problem of Bolivian children is chronic malnutrition, whose most obvious manifestation is low height for age<sup>1</sup>. Measurements made by the ENDSA 2008, according to the new pattern recommended by the OMS, reports 27.1% of chronic malnutrition, the highest in Latin America<sup>2</sup>. The same source indicates that in regions of extreme poverty such as Northern Potosi, the chronic malnutrition (-2DE “Moderate”) in children under 5 ranges from 45% to 50%, depending on the education of the mother, among other factors. Malnutrition is a poverty cause which makes it a national priority, and a mandate in development institutions’ work.

Participating families in the process said that before, during their grandparents’ time, no sugar or sweets were consumed, so bones were stronger. Their ancestors ate more native vegetables, neither rice nor noodles were even known, and they knew that the barley grain gave more strength than potatoes and chuño, which mainly fill the stomach.<sup>3</sup>

Regarding the child’s first meal, there was consensus on soup made with mashed potatoes and just a few pieces of carrot and onion, and some fat, usually cow or sheep, a dish considered rich and nutritious enough. For mothers, young children should eat foods with the same consistency as milk, and for this reason, mothers offer them broth. Using this perception, the project took advantage to propose that the “broth” be nutritious, consistent and thick, incorporating foods such as quinoa, beans, and peas, and not just potato and chuño. Some mothers believed that foods prepared with grains, such as “*chapu*,” gives the child stomach pain or constipation because they cannot chew as they do not have teeth, so they chose to offer softer foods such as “*papa ñut’ u*” (mashed potato with broth) or a whole potato that is easy for 7 to 8 month old child to hold.

Fathers, due to their role of providers, more than mothers, say it is good to give young children foods that they see adults eat, since not giving them what they want is bad for their emotional well-being. This includes low-nutrient foods like cookies and candy. The sugar cookies generally are brought to communities by NGOs and companies that local governments hire to provide school breakfasts, giving them a status that community members work to achieve: “*we give the same as institutions provide.*”

Communities along the road and markets do not necessarily have greater diversity, as is the case of the Lancaya community, which despite being the most distant, consumes foods with barley grain, which does not happen in communities like Camacachi or Cayastía which are on the road. This is because in the latter, the man migrates and the woman is overworked. Migration increases access to processed foods like pasta, cookies, and other sweets<sup>4</sup> that displace nutritious local foods, creating a feeling of higher status for families living near the roads. In addition, these communities are centers of inter-community celebrations.

Reflecting with mothers and fathers on Complementary Feeding, they expressed that they are aware that even having potatoes, grains and, to a lesser extent, legumes and vegetables, they often do not diversify their diet or stop to think about the effects that this food generates in the lives of their children. For this reason, at the beginning of the project, the statement: “Our foods are fine for raising wawas” was heard. It was also observed that the initiation of Complementary Feeding begins with the foods or produce available in each agricultural season: frosty weather, planting time, rainy season and harvest time. At some times, foods are scarce so age children starting their Complementary Feeding receive meals that are not very diversified or, in the worst case, only potatoes.

Potato is the food most widely available throughout the year, in addition to vegetables or fruit that families buy.

1 MHS (2006) Clinical AIEPI-Nut. Technical Basis.

2 The OMS multicenter Study for Growth Standards has shown that children’s growth during their first five years of life is similar in all regions of the world and mainly depends on proper feeding (Breastfeeding, Complementary Feeding) and adequate health care and that genetic factors are less important for the early stages of life (OMS 2007).

3 Participatory workshops in the communities. November 2012.

4 During migration the following items are also purchased: tomatoes, oil, fruits, Locoto, sugar, onions and carrots.

In addition to the above, it was observed that men consider that Complementary Feeding is a role for women. A lack of dialogue between partners on good feeding was also observed. Males did not appreciate the differences between nutritious and non-nutritious foods, as well as being accustomed by migration to the consumption of processed foods such as biscuits, noodles, sweets, etc. However, upon learning about the nutrients of their local foods, they assumed an attitude of support for the mother so that such foods would not be lacking for the family.

## Conceptual Framework

It is advisable to start Complementary Feeding at six months of age because of its critical importance for the child's growth and development. While breast milk provides one half or more of the nutrients needed by the child in the second semester of life and it is recommended that breast milk be provided first from the 6 month to 18 to 24 month periods, there is a period of vulnerability where infants require adequate food that meets their nutritional needs. In this period, breastfeeding provides about a third of the energy and half the protein that a child needs and about 75% of the vitamin A.<sup>5</sup>

Complementary feeding involves giving the child other foods including additional liquids. These foods do not replace breast milk and come from animal sources, fruits and vegetables rich in vitamin A, and must be administered daily. Infants who breastfeed between six to eight months should receive complementary foods two to three times per day, with one or two snacks. Children and infants aged 9 to 23 months receive meals three to four times per day, with one or two snacks<sup>6</sup>. In Bolivia, where the first foods almost always include meals based on grains and tubers, it is unlikely that children receive the three food groups considered the minimum number appropriate for infants still breastfeeding<sup>7</sup>. These minimum requirements contrast with the figures in Bolivia, where 10.4% of children of 4-5 months of age and 52.3% of 6-8 months, mainly consume foods that are tubers / root vegetables; while 80% of children aged 12 to 23 months and nearly 90% of children under two years, consume sugary foods.

Complementary Feeding started very early or very late puts the child at risk.

<b>Early start</b> <i>(Before six months of age)</i>	<b>Late start</b> <i>(After seven months of age)</i>
<ul style="list-style-type: none"> <li>✓ Breastfeeding may be replaced, as a result of which the child does not meet his or her nutritional requirements;</li> <li>✓ Risk of a diet low in nutrients;</li> <li>✓ Increases the risk of disease;</li> <li>✓ It reduces the supply of protective factors in breast milk;</li> <li>✓ Increases the risk of diarrhea;</li> <li>✓ Increases the risk of wheezing / asthma or other allergic conditions;</li> <li>✓ Increases the risk of the mother to a new pregnancy.</li> </ul>	<ul style="list-style-type: none"> <li>✓ The child does not receive the additional food required to meet his or her needs and grows well;</li> <li>✓ Grows and develops more slowly;</li> <li>✓ The child may not receive the necessary nutrients to prevent malnutrition and deficiencies such as anemia due to lack of iron.</li> </ul>

Source: Counseling for infant feeding and young child: OMS 2007

<sup>5</sup> During the first 6 months of life, exclusive breastfeeding provides all the nutrients and water that the baby needs. However, there are important reasons to start complementary feeding from six months of age: a) The energy and nutrients of breast milk are no longer sufficient; b) The child learns to control the lingual movement better; c) They have chewing movements d) They initiate teething. MHS Bolivia, Technical Basis of AIEPI Nut; 2006 OPS/OMS, 2003.

<sup>7</sup> Arimond and Ruel, 2004, in INE/Bolivia; ENDSA 2008.

After six months of age, children begin to experience a gap between the total energy, iron and vitamin A necessary and that provided by breast milk. If they do not get past these gaps, the boy or girl will stop or slow their growth. The child who is not growing well is more likely to become ill and the recovery from illness will be slower.

Children consume their iron stores gradually until six months of age. After that, there is a gap between the child's iron requirements and the iron that child receives from breast milk, which must be overcome in Complementary Feeding through food rich in iron and zinc<sup>8</sup>. Otherwise, children may suffer from anemia and be at the mercy of a higher probability of infection, as well as slower growth and development. With Complementary Feeding, families are encourage to provide all foods rich in Vitamin A through consumption of dark green leaves (like Okhoruro), vegetables and yellow fruits (carrots, squash), liver, milk and its derivatives such as butter and cheese, egg yolks and other foods fortified with Vitamin A, a nutrient that is stored in the body of the child for some months. The varieties of vegetables and fruits that can be found in the child's diet can help to meet nutrient needs. In relation to energy requirements in the Northern Potosi context, Complementary Feeding is expected to contain wheat, corn, rice, potatoes, and foods providing energy and fats and oils where there is a greater concentration of energy. A half teaspoon of oil added to the child's food plate will provide additional energy and increases the consistency of the baby food (papilla), making it softer and easier to eat.



### Implementation Process

The process of research and development on Complementary Feeding<sup>9</sup> was implemented between the months of September 2012 and March 2013 through community workshops with participatory methods and monthly visits of family support. The average number of participants was 103 families, of which 80 included children under five years.

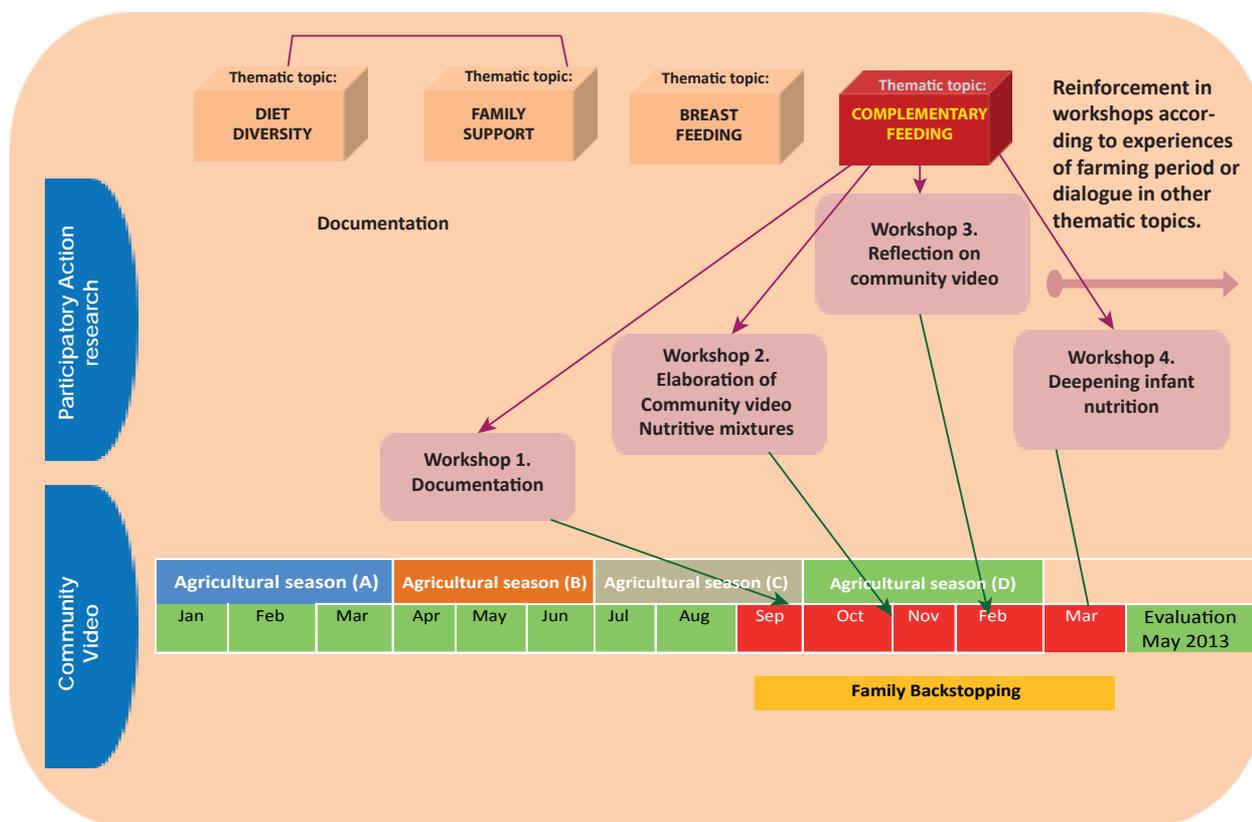
Four workshops were held in each community with a duration of four hours, which, added to the waiting time of participants and collective snack, meant that the workshop lasted a whole day, with family support activities performed the following day.



<sup>8</sup>Zinc is another nutrient that helps in the child's growth and health. It is usually found in the same foods that contain iron. MHS Bolivia, Technical Basis of AIPEI Nut; 2006.

<sup>9</sup> Complementary Feeding is one of the four themes of the project, as well as the following: Family support, Breastfeeding and Diversity in the Diet.

Figure N° 16. The action-research cycle in workshops and accompaniment



Source: World Neighbors, visualized and documented material, 2012.

The workshop and accompaniment session complemented the knowledge building process and provide an opportunity to generate new information and as well as the space necessary to achieve the greater involvement of families: many people did not actively participate in the workshops, but they did do so on the day of accompaniment, when the facilitator visited them for a whole day, helping out with household chores or on the farm.

In workshops and accompaniments, the brainstorming sessions were performed using participatory methods: Participatory Action Research, and Community Video Display (see details in the next section).

## Findings from the process

Based on their knowledge, the mothers of the five communities initiated the Complementary Feeding to their babies before or around four months. The broth or potato ñut'u (mashed potato) was the food they preferred to start feeding<sup>10</sup> because it has the same look of breast milk, soft and liquid, thus facilitating the intake.

*"If the child is given food to eat too late, then he/she will not eat very well and we will have to beg them to eat, but if we get them to try it sooner, (like at 4 months), they will eat very well. Besides, kids know when they should start eating: they ask for it with their hand".* Group of mothers, Chacoma community.

In local perceptions, children could not receive grain or quinoa because, as those ingredients were not mashed, they could not eat them because they do not have teeth yet. Therefore, they preferred to give only "papa ñut'u".

<sup>10</sup> When we referred to broth, it is usually referred to a potato and chuño soup, boiled with bones or a little fat; in this category may also be considered quinoa, noodles and rice soup.

The preference for starting Complementary Feeding with potatoes is strongly linked to the fact that this tuber is the main food for families in both fresh form and chuño<sup>11</sup>. In times of much work, during planting and harvest, mothers cook many potatoes and chuño, as well as lamb meat, to ensure that workers have the necessary strength for such demanding work. There is not enough time to prepare other foods. For this reason, children who are old enough for Complementary Feeding also consume a lot of potatoes.

**Table N° 25. Nutritious foods for Complementary Feeding according to mothers / fathers and products available**

Age of the child	Nutritious food	Perceived benefits	Examples	Frequency
4 to 6 months	<i>Ullpu</i> (drink) of maize, barley and wheat	Strength and growth	<b>Ñut'u</b> potato 	From time to time "Sankito"
	<i>Ñut'u</i> potato squashed with carrot	Makes grow		
	Banana	Disease care		
7 a 11 meses  <i>Besides the above, it must be consumed:</i>	<i>Chapu</i> (pito de trigo con agua)	Increases growth	<b>Chapu</b> of wheat 	From time to time "Sankito"
	<i>Murqha</i> (wheat soup)	Strength		
	<i>Phisara</i> (quinoa grain)	Makes grow		
	Banana and orange	Disease care		
	The most nutritious of the common pot	Increase intelligence		
1 to 2 years old  <i>Besides the above, it must be consumed:</i>	<i>K'ispiña</i> (wheat or quinoa tortilla)	Strength	<b>Phiri</b> of wheat 	From time to time "Sankito"
	<i>Phiri</i> of wheat	Strength		
	<i>Sajta</i> (stew) of papalisa	Makes grow		
	<i>Lawa</i> (cream) of maize	Strength		
	Meat or llama meat	Makes grow, gives strength		
	Prickly pear, peach, banana and orange	Diseases care		
	Roasting of maize, wheat, bean and pea	This makes them feel full		
	Salad of onion, tomato, carrot.	Increase intelligence		

Source: World Neighbors, participatory workshops on Complementary Feeding, 2012.

It was also observed that among the Complementary Feeding practices, mothers avoided giving meals based on grain (barley and wheat) flour, such as "*chapu*" because they thought that these were causing stomach pain or constipation in children, preferring potato, rice or noodle soups.

The reflection process using participatory methods (PAR, VIPP and CV) on the knowledge and practices of Complementary Feeding and the new information that was provided to parents helped to identify

<sup>11</sup> In communities, there are reasons why potato consumption is privileged, among them because: It is raw material to make chuño, food that lasts and satisfies the hunger of the family; Local climatic conditions favoring the potato crop; it is a fundamental food use at every meal; you can eat only with salt; is commercial, can generate income to buy other foods. The potato snack, has volume and consistency, is apt to invite and easy to prepare and carry; it is soft and supportive to start infants feeding; is an indicator of wealth and family welfare, it is like having a capital; is part of the traditional memory and its crop in AYNi makes social integration patterns reproduce. Community Workshops, World Neighbors 2012.

community meals using local products that can be used to start the CF without losing sight of their beliefs and the importance of good infant feeding.

With new information and reflections on Complementary Feeding, fathers and mothers stated that good nutrition has a direct and positive impact on *Yuyay* or cognitive development that the *Jark'ay* protects from diseases and *kallpa* which is the energy of their children under two years. In a literal manner, some men expressed their desire to have their children *Umasapas* (smart), *kallpararas* (strong) and *jatuchiq* (tall).

Complementary Feeding of children under two years depends on the family's nutrition and is centered on the products and foods available, as well as those used in each agricultural period (time of planting, cold, crop, fallow). This determines the food with which the CF will begin or be diversified. For example, in the period from November to January, all families experience a shortage of fresh foods like beans, peas, tarwi and potatoes; however, chuño and pitos of dry grains like wheat, barley and rye are consumed, in addition to dry beans and peas. This means that at this age the child can also receive nutritious meals. However, it has been seen that the Complementary Feeding is subject to factors that facilitate or impede it, some of which are described in the following tables.

### Factors that facilitate the Complementary Feeding

*“I would like to apply all the knowledge that we are receiving to the children that I will have in the future. I would not like to give them just potatoes and chuño. I want them to be smart and study until they are professional and if the grains are the food they need to eat, I will endeavor to give them this to eat.”* Elena, Community of Camacachi.

**Table No. 26. Facilitation of Complementary Feeding**

<b>The successful Complementary Feeding occurs when:</b>	
<b>Family support</b>	The husband and other family members know what foods to give the child and make sure to procure them.
<b>Access to information that revalues</b>	The people know and understand the nutritional characteristics and benefits of local and cultivated products generates appreciation for consumption.
<b>Nutrient mixtures</b>	Meals are prepared by mixing pitos (flours) and products containing iron, zinc and vitamin A, or people understand that all meals must have at least three types of products.
<b>To get nutritious products</b>	It is defined that every so often, vegetables, fruits and other nutritional products will be bought or traded.
<b>Access to sufficient land</b>	More land permits the production of more and more diverse crops with nutritious products.

Source: World Neighbors, participatory workshops on Complementary Feeding, 2012.

*“My kids do not like rice or noodles and my husband likes them even less, which encourages me to cook meals with wheat, corn and other crops we grow here. I notice the difference between my children and the neighbor's children. Their children usually eat only rice and noodles. They do not eat grains and have no progress at school, however, mine are doing very well”.* María, community of Alta Ticanoma 1.

*“Besides, my son only eats eggs, meat and vegetables and with this he is a very healthy boy: although he gets sick, he does not quickly lose weight.”* Victoria and Marcelo, community of Alta Ticanoma 1.

## Factors that hamper the CF

It can be observed that in times of a lot of work, Complementary Feeding will consist of meals considered “easy” to prepare and carry. Mothers say that it is faster to cook noodles, rice or potato and chuño snacks, leaving them more time to assist in agricultural work or rest. In addition, these foods are conserved throughout the day and do not require special containers.

*“Quinoa (phisara) is eaten more at home; taking it to the farm is difficult because if there are more people, there is not enough food for all. Therefore people cannot eat large amounts; we do not have a lot of quinoa to serve a lot.”*

*“We cannot take peeled wheat to the farm plot because it rots quickly in the heat.”*

*“It’s hard to take lawa to the farm or while we graze because pots are needed, and when there are many workers, larger pots are required.”* Mothers of Lancaya community.

**Table No. 27. Limiting factors of Complementary Feeding**

<b>Complementary Feeding is limited when:</b>	
<b>Tastes for certain foods</b>	Husbands who migrate for work and the young people who come to study in urban areas impose their taste for noodles or rice. Mothers give cookies or candy to young children under the argument that they like and make them happy.
<b>Complexity of Complementary Feeding</b>	The main message of health personnel to promote CF is based on the consumption of micronutrients and nutritional supplements of public programs (nutritional sprinkles, pearls of vitamin A, iron syrup “Ferrasol” and Nutri baby). Public programs do not make communities more sensitive to the possibilities of CF based on their own traditional and local foods. That is why some mothers have assumed that their products are not sufficient for successful CF.
<b>Uncontrolled mixtures</b>	Children could eat nutritious food from the common pot, but out of love, parents give them candy, cookies and other products unsuitable for their age and health.
<b>Access to supply centers</b>	Buying vegetables and fruits is difficult and when they do buy, they buy in small quantities, as a result of which they never have enough.
<b>Idealization of the potato</b>	Potatoes are linked to the ancestral memory. They are an easy food to prepare and eat, including for small children, and besides, having potatoes and chuño in the storeroom, is an indicator of food security and represents the family capital.
<b>Little land and animals</b>	Families with little land grow potatoes exclusively because this is their primary food. They remedy the lack of grains with rice and noodles. The noodle, because of its taste, is seen as a good substitute for meat.
<b>Periods of planting and harvesting</b>	Family life is observed mostly on the farm. At planting or harvest times, all family members of working age assume these tasks as a priority, above taking care of small children and animals care. <i>Wathia</i> and <i>phasa</i> are eaten only at harvest time.
<b>Several factors causing displacement of nutritious products in the family diet.</b>	The quinoa crop grown in association with potato generates a risk of losing the potato crop due to moth infestation. Some families no longer have tarwi, bean and pea seeds due to crop losses from frost. In addition, cooking quinoa and tarwi takes time and is difficult.

Source: World Neighbors, participatory workshops on Complementary Feeding, 2012.

It has been seen that a strategy to encourage the efforts of parents to ensure diversity in feeding and appropriate Complementary Dietary, is possible through reflection and the understanding of the nutritional properties of food and meals in each agricultural period, which include local food and outsiders. With the participants, it has been established the degree of access to nutritious foods to generate the necessary strategies and get them, since they have special effect on *Yuyay* (intelligence), *kallpa* (energy) and *kawsay* (health) of children under two years and the other members of the family.

## Evaluation of access to foods rich in essential nutrients

### Iron

Products	Favor to:	Accessibility		Type of meal
		Communities of altitude: (Cayastía, Lancaya, Camacachi)	Communities of rivers: (Alta Ticanoma 1 y Chacoma)	
<i>Okhoruro</i>	Prevents anemia and strengthens blood.	Moderate to high seasonal native wild vegetables	Scarce	Soup of <i>Okhoruro</i> 
Chard		Scarce, irregular purchase at local markets	Moderate, purchase and crop	
Liver		Moderate, 3-4 times a year when a sheep is slaughtered	Moderate, 3-4 times a year when slaughtering a sheep	
Quinoa		Moderate production, associated with potato crop	Low production	
Barley grain		High production, but is also to feed pigs	Low production	

Source: World Neighbors, participatory workshops on Complementary Feeding, 2012.

### Zinc

Products	Favor to:	Accessibility:		Type of meal
		Communities of altitude: (Cayastía, Lancaya, Camacachi)	Communities of rivers: (Alta Ticanoma 1 y Chacoma)	
<i>Okhoruro</i>	Brain and growth	Moderate to high seasonal native wild vegetables	Scarce	<i>Phisara</i> of quinoa 
Barley grain		High production, but is also to feed pigs	Low production	
Quinoa		Moderate production, associated with potato crop	Low production	
Rye		High production	High production	
Wheat		High production	High production	

Source: World Neighbors, participatory workshops on Complementary Feeding, 2012.

## Vitamina A

Products	Favor to:	Accessibility :		Type of meal
		Communities of altitude: (Cayastía, Lancaya, Camacachi)	Communities of rivers: (Alta Ticanoma 1 y Chacoma)	
Carrot	Eyes, hairs, skin and nails	Scarce, irregular purchase at local markets	Moderate, purchase and crop	
Tomato		Scarce, irregular purchase at local markets	Moderate, purchase and crop	
Izaño		Moderate, associated crop	Moderate, associated crop	
Papa lisa		High production	High production	
Tuna		Escasa	High production	
Okhoruro		Moderada a alta verdura nativa	Scarce	

Source: World Neighbors, participatory workshops on Complementary Feeding, 2012.

## Calcio

Products	Favor to:	Accessibility:		Type of meal
		Communities of altitude: (Cayastía, Lancaya, Camacachi)	Communities of rivers: (Alta Ticanoma 1 y Chacoma)	
Phasa	Bones and teeth	High, they buy for its low cost and in harvest season	High, they buy for its low cost and in harvest season	
Quinoa		Moderate production, crop associated to potato	Low production	
Barley grain		High production, but is also to feed pigs	Low production	
Wheat		High production	High production	
Rye		High production	High production	

Source: World Neighbors, participatory workshops on Complementary Feeding, 2012.

*“For our children, we always prepare mashed potato, chapito, mashed fruit and broth with vegetables.”* (Silveria of Cayastía community).

*“The frequency of food we give to our babies is determined by the activities that mothers perform (grazing, planting or harvesting and cooking). Cayastía.*

*“Seeing that the grain is so good for all, we are rebuilding this stone mill for flour we need for our children. When we grind with stone, its taste is richer at every meal and also when we make bread, we do not need yeast: it swells by itself and holds for a long time without changing taste, unlike the flour that is ground by machine.”* Cayetano, community of Chacoma.

## Results

As a result of the final Project survey, conducted in June 2013, it is determined that the fathers/men have increased their knowledge of Complementary Feeding: 68% of parents know that CF should start no earlier than 6 months; 96% know that the CF should be consistent; 96% know that the CF should be diverse; and 79% of parents know that the CF should be given frequently.

Through the frequency of food consumption in the last week, it is known that: 100% of children under two years consumed tubers, oils and fats in their Complementary Feeding in the last week; 85% of children have consumed grains, vegetables with vitamin A and meat; 74% of children consumed legumes and only 11% of children consumed milk products. Compared to the frequency of food consumption in 2010, there has

been increase in consumption of meat, oil, fats and vegetables with vitamin A and a marked decrease in the consumption of milk products. It is important to consider that the latter is due to the time of the surveys: the 2010 survey took place in March, a green season, where animals, like families, have more green foods. This is the only period in which families can consume milk and cheese. In June 2013, families had a lot of work to do as it was still potato harvest season and they only had this product, in addition to dry grain cereals.

## Conclusions and Learning

### Complementary Feeding

In times of intense work, the woman, in addition to fulfilling her tasks (pasturing, child care, knitting), assists in planting and harvesting activities. As she is overworked during this period, she tends to neglect Complementary Feeding activities to some extent. In these periods, women cook only potato-based snacks, chuño, meat or noodles which influences children's low weight and growth. This fact is due not to the lack of food but rather to the attention that both parents have to ensure the livelihood of the entire family through good planting and harvesting.

*“Sometimes we cannot give the frequency and variety of recommended food to our wawas because as mothers, (women) we have to graze, assist in planting, harvesting and cooking; and that is why our babies eat what we have and when we have time off.”* Mothers of the Cayastía community.

Feeding the family is also centered on food and products of the current agricultural period (fallow, planting, harvesting, etc.), which determines the foods with which to start the Complementary Feeding (CF). In times of lower diversity, the CF could include undiversified foods or ultimately only potatoes, the only food available. Seasonal availability of food cannot really be changed but families were encouraged to provision or provide themselves with nutritious food in times when the only fresh food is the potato; the important thing is to find the best and mainly, real, possibilities of nutritious meals.

According to the memory and statements of the community elders, in the past, families and their children ate mostly grains, vegetables and native potatoes, the kinds of food to which it is attributed that people could live longer.

In the process, it was recommended that Complementary Feeding be initiated from six months to two years of age, because of the critical importance for the growth and development of children, and because the combination of food with milk breast can cover their nutritional needs. Mothers and fathers, reflecting on good nutrition, learned, became aware of and implemented a diet for their children rich in Iron, Vitamin A, Zinc and Calcium obtained from products they grow, as well as foods that they exchange or purchase from nearby communities and markets. They also held community workshops with participatory methods (PAR, PPV and CV) and accompaniment visits.

The common practice of anticipating Complementary Feeding even at two months of age was observed in the five communities where the WN team worked. The broth or ñut'u potato (boiled and mashed potato) was the food with which mothers preferred to start feeding, because for them, these foods have the same fluidity and smooth appearance of breast milk. However, thanks to new information and participatory reflection with parents, prepared foods based on local products were identified which could be used to start the CF. These include chapu (a mix of pitos with water), potatoes and vegetables mashed with broth or thick grain drinks made from corn and other cereals. Without losing sight of their cultural beliefs and the importance of good child nutrition, the appropriate frequency and consistency of CF were also defined.

This process also identified facilitators and limiting factors of Complementary Feeding, noting that education, food availability or practice in its combination, is not enough. For this reason, special attention was given to the reflection and understanding of the nutritional foods properties in each agricultural period (green times, frost, harvesting and planting), understanding that these have a particular impact on the “Yuyay” (intelligence), the “kallpa” (strength) and “kawsay” (health) of children under 2 and on the other family members.

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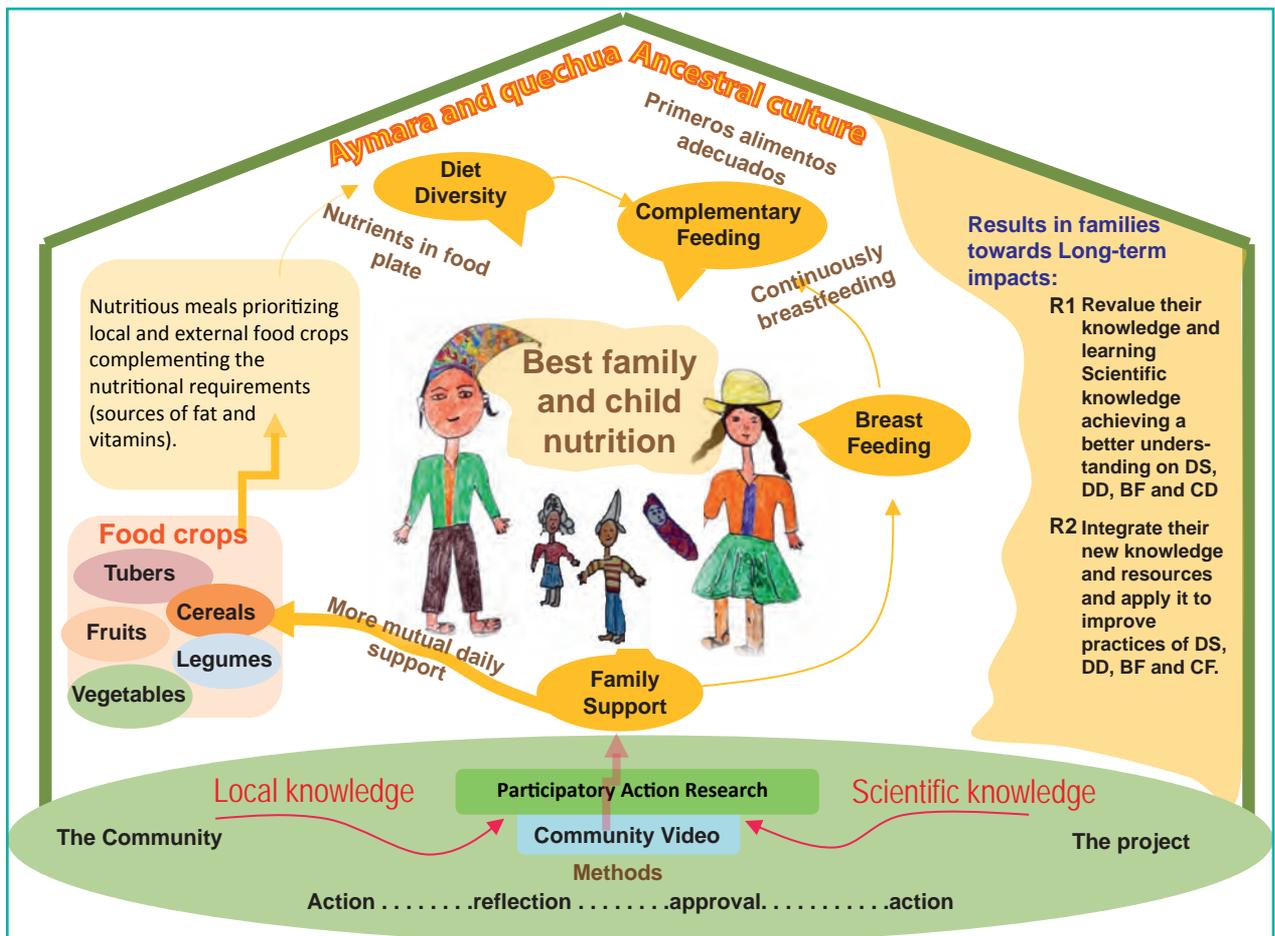
## **METHODOLOGY GUIDELINE**

**FACILITATING A PARTICIPATORY PROCESS OF ACTION-  
LEARNING ON FOOD SOVEREIGNTY AND NUTRITION IN  
RURAL COMMUNITIES**

# Presentation

The present methodological guideline is a product of the “Learning-Action on Food Sovereignty and Nutrition for Marginal Rural Areas of the Central Andes of Bolivia” Project funded by the McKnight Foundation and implemented by World Neighbors with the active participation of mothers, fathers, and grandparents of 103 families from five Northern Potosi communities, from March 2010 to August 2013.

**Figure No. 18. Diagram of comprehensive representation with methodology, thematic topics and project results.**



The research and development project, focused on people’s wisdom as a starting point and the valuable local contribution, which, when added to the scientific knowledge provided by World Neighbors, allowed a dialogue of knowledge and a process of “action-learning” whereby the participants acquired new knowledge and improved practices aimed at proper family nutrition, especially for children. The following thematic topics were implemented: Family support (DS) Diet Diversity (DD), Breastfeeding (BF) and Complementary Feeding (CF).

The Methodology Guideline provides the set of tools and techniques from proven methods such as Participatory Action Research (PAR), Participatory Processes Visualization (PPV) and Community Video (CV), which were used in an ancestral Aymara-Quechua cultural scenario amidst a context of social exclusion, poor access to public services, climate change, reduced agricultural production and low education levels, among others. These methodologies allowed the local and scientific knowledge to converge and generate new knowledge as well as innovative and essential actions to improve nutrition in the five communities where the project was implemented.

This document explains and describes, in detail, the methodological process, tools and testimonies of the actors as a way to share this experience with authorities, the staff of various institutions and organizations, and with colleagues working in rural development.

## **Methodology Guideline**

Facilitating the action-learning participatory processes on food sovereignty and nutrition in rural communities.

# What is the Guide?

This guide is a document that serves as a methodological tool where the topics, content, resources, examples and recommendations for participatory knowledge building and practices related to rural communities in the areas of food, nutrition and family farming, are presented.

# What the guide is NOT?

The guide is not a series of recipes to be closely followed. Applying the guide is not a guarantee of success because other aspects such as attitude, will, context analysis, proper planning and monitoring, among others, are required.

# Where can it be applied?

The shared experience took place in rural indigenous communities in Northern Potosi, Bolivia, but it can be used in other areas and regions.

## What are the participatory methods?

For the World Neighbors team, the participatory methods are a set of tools and techniques that facilitate the democratic participation of actors in an action-learning process in which participation is understood as the involvement in decision-making for self-management. Applying these tools and techniques with an attitude of respect, transparency and much enthusiasm, the power dynamic that exists within any group of people, especially from different cultures, is broken, creating a space in which the status and roles of different people do not limit the free exchange of ideas and opinions, as well as equal participation in decision-making.

Encouraging participation through these methods promotes respect for local knowledge and experience that is of fundamental importance as a starting point so that, in a dialogue of knowledge, it can be connected with scientific knowledge and can generate significant new knowledge, useful and applicable to the local situation, for the participants.

Participatory methods allow us to obtain primary information and also to carry out appropriate training processes and action promotion. They also satisfy the purpose of the research and the interests of the participants (mothers, fathers, grandparents, and youth), in exchanging information, knowledge and ideas that generate new knowledge in sensitized participants who are ready for action. In this project, World Neighbors has mainly used three participatory methods such as Participatory Action Research, Participatory Processes Visualization and Community Video.

These methods have been shown to produce excellent results, which are enhanced when combining them due to a synergistic effect that facilitates learning and action.



## The Participatory Action Research - PAR method

The PAR is a methodological approach that raises the challenge of building knowledge with stakeholders accepting that there are imbalances of power that must be balanced. It facilitates the establishment of a learning space in which participant's dialogue on local and scientific knowledge based on the ethical assumption that both are equally valid and valuable.<sup>1</sup>

This methodology can help not only the transformation of material conditions but can generate a process in which people collectively transform. There is talk of linking the research period with the action period, seeking and encouraging the participation of persons involved in some or all phases of research, as well as validating popular knowledge and skills. The PAR makes it possible to join the participants in the following scenarios:

- Moving from object to subject and from individual subject to collective subjects;
- Linking knowledge and action as a dialectical relationship;
- Using techniques that can be adapted to pluralism to the problems that need to be solved;
- Contextualizing the processes and structures, organizations and individuals in their historical dimension;

<sup>1</sup> Salas and Tillmann, 2010.

- Articulating scientific and local knowledge;
- Working on models of multidirectional communication.

One characteristic of PAR is that it is not focused on results but on the fact that what for, the how and the with or whom, are being redefined throughout the process itself. It does not evaluate what was initially raised but considers what is given at all times. In this respect, the process and the research are inseparable.

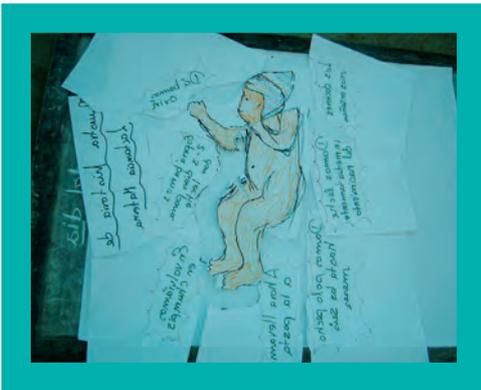
## PAR Applications

Using the PAR, the World Neighbors team and people of communities have implemented processes of diagnosis, planning, training and evaluation. The most important PAR techniques are detailed below:

**In the community workshop area:**

### The Participatory Processes Visualization Method

The Participatory Processes Visualization (PPV) places people at the center of the process of generating



<b>Technique:</b>	Mapping roles
<b>Applied in the thematic topic:</b>	Family Support
<b>Applied to other subjects:</b>	Yes Hierarchy and forms of organization
<b>Purpose:</b>	Exploration of knowledge and practice
<b>Group:</b>	Mothers, fathers, children, youth

**Procedure:**  
Groups of four to six people are organized, ideally separated into groups of interest such as mothers, fathers, and grandparents, who must respond through drawings and with written words to the question: ¿How do fathers, grandfathers and grandmothers helps and cares for children? Each group identifies the roles they play within and outside the home. After a period of 30 to 45 minutes a plenary is carried out to socialize the work of each group and generate a dialogue about the roles oriented to child and family nutrition.

**Note.-**  
In this technique, it is important that the facilitator does not accept to draw instead of participants, some people often say they cannot draw, in which case they must be motivated and give them more time.



<b>Technique:</b>	Telling the reality	
<b>Applied in the thematic topic:</b>	Breastfeeding	
<b>Applied to other subjects:</b>	Yes	Everyday practices of people in the community
<b>Purpose:</b>	To know the common and different practices in relation to an everyday topic	
<b>Group:</b>	Mothers, fathers, children, youth.	

**Procedure:**

Groups of four to six people who must respond through drawing or writing to the following questions:  
 How do you think successful breastfeeding should be?  
 Each group discusses breastfeeding and draws those aspects they consider are good and bad. After a period of 30 to 45 minutes, a plenary is carried out to socialize the work of each group and establish the common, different and particular practices.  
 In a subsequent workshop, participants reflect on practices which were good or bad for breastfeeding and why, taking as input the technical and scientific knowledge that was provided.



<b>Technique:</b>	Brainstorming in flipchart	
<b>Applied in the thematic topic:</b>	Diversity Diet	
<b>Applied to other subjects:</b>	Yes	Collective ideas, step by step procedures and others
<b>Purpose:</b>	To know the foods which are available in the community to eat according to the agriculture calendar	
<b>Group:</b>	Mothers, fathers, children, youth	

**Procedure**

Four to six groups are organized and given the task of writing down on a large sheet of paper (flipchart) what they have available to eat in the community. Previously, the group agrees on the agricultural calendar periods. These could be: harvest time, planting time, green time, or cold time according to context. Each group dialogues and writes in their flipcharts. After a period of 30 to 45 minutes, a plenary is carried out to socialize the work of each group and establish common, different and particular practices.

different ideas for solving problems and creatively developing learning, plans and program designs. This encourages groups to build a common vision for all participants and ensure that the decisions made by the group are sustainable over time. PPV is composed of a number of visualization techniques including cards of different shapes and colors, as well as other resources that participants use to contribute to discussions, share opinions and experiences anonymously or openly.

Similarly, PPV includes a variety of resources and methods of participation that can be used on several levels with homogeneous and heterogeneous groups as it creatively combines a set of methodological approaches that emphasize participation for the full integration of the participants through visualization techniques<sup>2</sup> that are appropriate for groups that do not handle reading and writing.



## Aplicaciones de VIPP

### Ámbito de un taller comunitario

<b>Technique:</b>	A card, an idea
<b>Applied in the thematic topic:</b>	Complementary Feeding
<b>Applied to other subjects:</b>	Yes Community life, local wealth
<b>Purpose:</b>	To meet the individual perspectives on a subject and build a concept
<b>Group:</b>	Mothers, fathers, youth
<b>Procedure:</b>	A topic is offered for reflection and several cards and a marker are given to each participant; they are asked to write or draw an opinion, clarifying that each card may be used for only one idea. After five to 10 minutes, participants explain their cards and then delivers these for a joint grouping; the facilitator helps to sort the cards on the wall.
<b>Recommendations:</b>	Provide different colored cards or forms that refer to ideas from women, men and youth. In our case, as the documentation pertained to the research, it was important to make this differentiation. The elderly usually do not write and one must write their ideas for them.



2 TILLMANN H. et al. Participatory Programs Visualization, a manual of how to facilitate and visualize creatively within a group process



## The Community Video (CV)

The Participatory CV is a very effective tool to document the experiences of people, their needs and expectations, as seen from their own perspective. The people who are having problems are those who are best placed to understand their limitations and opportunities; the videos made in a participatory manner promote reflection and change processes that enhance knowledge and local practices, while stimulating creativity. The Participatory Community Video is essentially a way to present the “internal perspective of communities”, in a lively and accessible manner for different types of people and audiences<sup>3</sup>.

The community video includes a set of techniques that seek to involve a group of people or a community in the design and creation of their own “video”. The underlying idea is that the development of this material is an easy and accessible task, and a great way to bring people together to discuss various issues, express their concerns or just be creative and tell stories<sup>4</sup>. Community videos are highly effective in attracting the participation of marginalized people and mobilizing them, as well as helping them implement their own forms of sustainable development based on local needs. It works because<sup>5</sup>:

- Participants (men, women and youth) quickly learn how to use video equipment through games and exercises.
- Facilitators help groups to identify and discuss subjects that are important for their community; PAR techniques and visualization can be used.
- Participants lead and shoot short videos with messages .
- The shot footage is shown to the community in projections and they are invited to reflect..
- This technique starts a process of learning, sharing information and dynamic exchange with the community that contributes to changing practices.
- The edited and finished videos can be used to promote awareness and exchange between communities.
- Videos and/or messages can be used to strengthen both horizontal (eg, communication with other communities) and vertical (eg, communication with decision-makers) communications.

## Aplicaciones del VC

### Ámbito de las relaciones interpersonales

<b>Technique:</b>	In front and behind the camera	
<b>Applied in the thematic topic:</b>	DS, BF, CF, DD Backstopping	
<b>Applied to other subjects:</b>	Yes	To all activities
<b>Purpose:</b>	To film and be filmed	
<b>Group:</b>	Mothers, fathers, youth and grandparents	
<b>Procedure:</b>	<p>Participants are explained that will be an exercise with partner to learn how to use the camera. Each member of the couple must answer: ¿What is your name? ¿What is your favorite food? ¿How is your family constituted? Or some other simple questions that will generate a relaxed atmosphere.</p> <p>Each participant asks questions to the person on their right, who in turn answers the questions the person on their left ask. Thereby, each participant experiences the camera, using the main functions and at the same time documenting the testimonies of others.</p>	

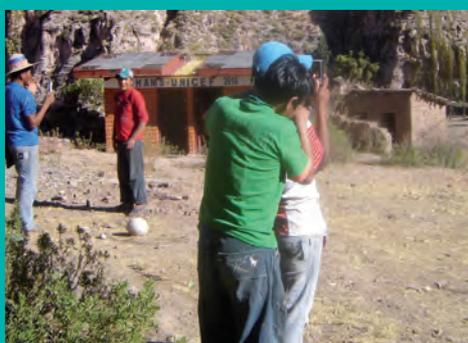


<sup>3</sup> Nick and Chris Lunch 2006.

<sup>4</sup> In WN, video is used not only for the transmission and diffusion of good practices related to better food is used, but also as a tool for reflection and documentation in a process that accompanies families; the participants are the ones using the equipment.

<sup>5</sup> Nick and Chris Lunch (InsightShare) and Maja Tillmann (IIED).

## Home and Community Area



<b>Technique:</b>	Interview with wise men and women	
<b>Applied in the thematic topic:</b>	Family support and Breastfeeding	
<b>Applied to other subjects:</b>	Yes	Ancestral knowledge
<b>Purpose:</b>	Identify wise knowledge to initiate a learning process	
<b>Group:</b>	Mothers, fathers, grandparents	

### Procedure:

Participants are explained that a video will be made to interview the wise men and women of the community. Previously, "the front and behind the camera" exercise (described on the previous page) should be performed. The filmmakers may raise the following questions: How was feeding before? How do families support each other? The group decides whom to interview. They take the necessary time to explain and generate confidence in the wise men and women so that they can share their knowledge. The group also should fit its work into the time offered by the wise people, which can take several days. In this case, once the interview is over, the camera is passed to someone else to continue with it and then taken to the workshop to share with the community.

### Recommendation:

A video projector and speakers should be prepared so that the work will be appreciated to its full extent..

## Community Workshop and the Community Area

<b>Technique:</b>	Activity documentation	
<b>Applied in the thematic topic:</b>	DS, BF, CF, DD Backstopping	
<b>Applied to other subjects:</b>	Yes	To all activities
<b>Purpose:</b>	Document in video the opinions, explanations and participant works	
<b>Group:</b>	Mothers, fathers, youth and grandparents	

### Procedure:

At each event to be performed, either a workshop or accompaniment, we try to get a participant to use the camera to film and document the activity. This ensures that films will be made from the perspective of the people themselves and reluctance to be filmed will be lower.

Once the activity is over, the camera is given to the facilitator and he/she downloads the digital audiovisual recording, properly encoded, onto a computer for subsequent use.

The idea is that, collecting all the records related to a specific topic, the participants will edit them on paper, which is a participatory technique where all decide how to develop the video.



## Community Workshop Area



<b>Technique:</b>	Video reflection	
<b>Applied in the thematic topic:</b>	DS, BF, CF, DD Backstopping	
<b>Applied to other subjects:</b>	Yes	To all activities
<b>Purpose:</b>	To reflect and start the collective learning	
<b>Group:</b>	Mothers, fathers, youth and grandparents	
<b>Procedure:</b>	<p>The videos made by people in the community about a particular topic are compiled and projected without editing. Starting at this point, questions are asked that allow participants to dig deeper on the issue in question and generate a joint reflection to help take individual, but also collective actions on various topics like feeding, breastfeeding, and family support, among others.</p> <p>Opinions and agreements are recorded on a flipchart that later serves to orient new videos or other actions.</p>	
<b>Recommendation:</b>	<p>A video projector and speakers should be prepared so that the work will be appreciated to its full extent.</p>	

## Accompaniment

It is a complementary method of direct observation consisting of accompanying families in their homes or daily working duties, dialoguing with them while helping them in what they are doing. At this time, the trust through informal conversations as well as the deepening of new knowledge and practices learned during the process, is strengthened.

The accompaniment in the project was carried out the day after the workshop. Priority was given to families with children under five. The accompaniment was characterized by *in situ* or participant observation of recommended practices as well as the strengthening of the same.

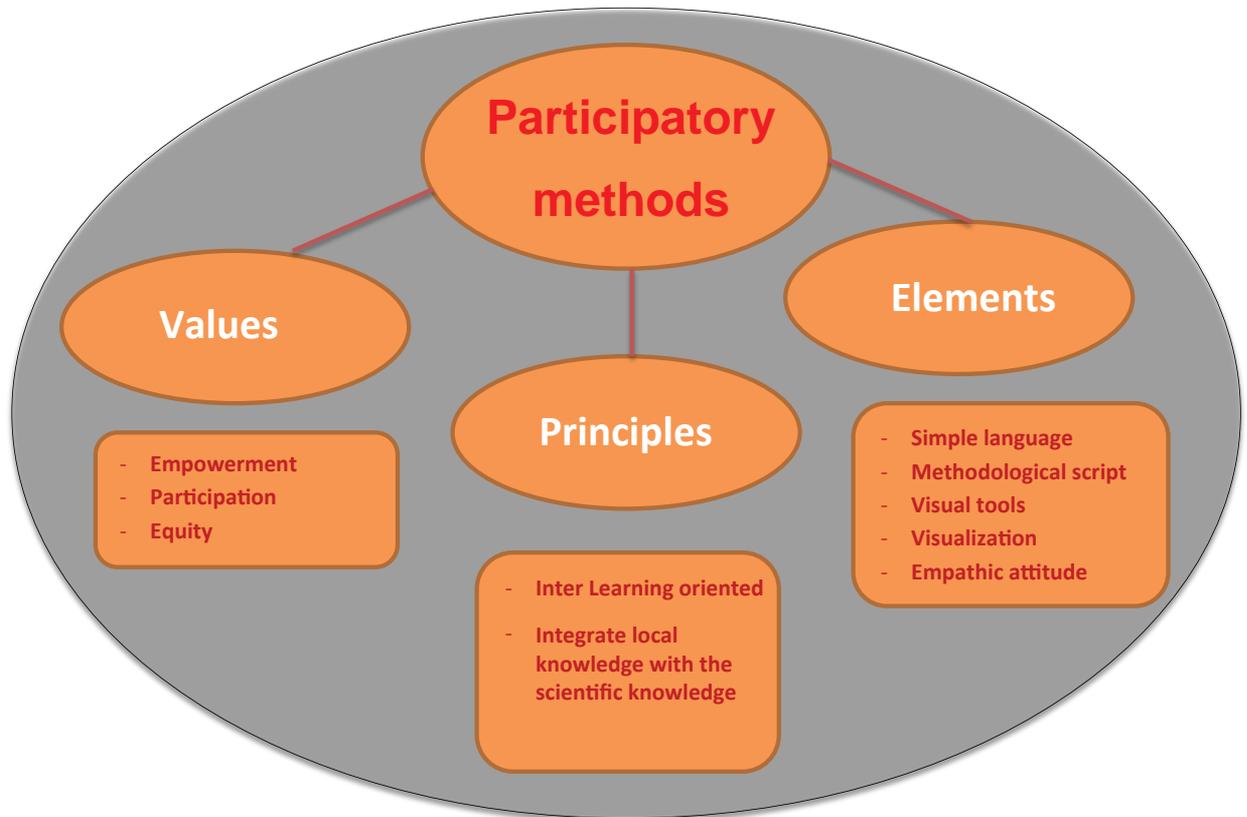
The accompaniment or the *watunakuy* (to visit and know how they are) has been highly valued by the community because it deepens the principle of action of “being together” in the process. The tasks performed by facilitators together with families for a day, is a sign for women of their willingness and appreciation, a very important aspect of learning based on action. For these appreciations, it was concluded that the accompaniment is a valuable tool that requires a significant investment in time.



## Encouraging aspects of participatory methods

In recent years, the experience of World Neighbors with participatory methods such as Participatory Action Research, Participatory Processes Visualization and Community Video, has allowed WN to recognize values, principles and elements that are the key to generating knowledge and actions to improve one or more aspects of individual, family and community life.

Figure N° 19. Scheme of participatory method advantages



## Technical considerations on adult learning

People learn differently, taking as a basis their personal experience. So, training practices should be guided by the following topics: understanding how learning happens, what they need, who learns; and how to properly organize the effective transmission of information.

### ¿What exactly is learning?

Learning is **the process of acquiring new knowledge, skills and attitudes** that occurs when we can i) feel the information, that is, use our five senses to assimilate information, ideas and facts considered new; ii) process the information, that is, decide whether the information is important and interpret it; iii) practice with it and reflect on it in order to store it in long-term memory and iv) remember, that is, recover this information from the long-term memory and apply it later, which means people have really learned.

Learning has much to do with memory, which is where all knowledge is stored.<sup>6</sup>

<sup>6</sup> According to Neill (2000), learning is managed by the three memory systems, 1. Sensory Memory, 2. Active Memory and 3. Long-term memory.

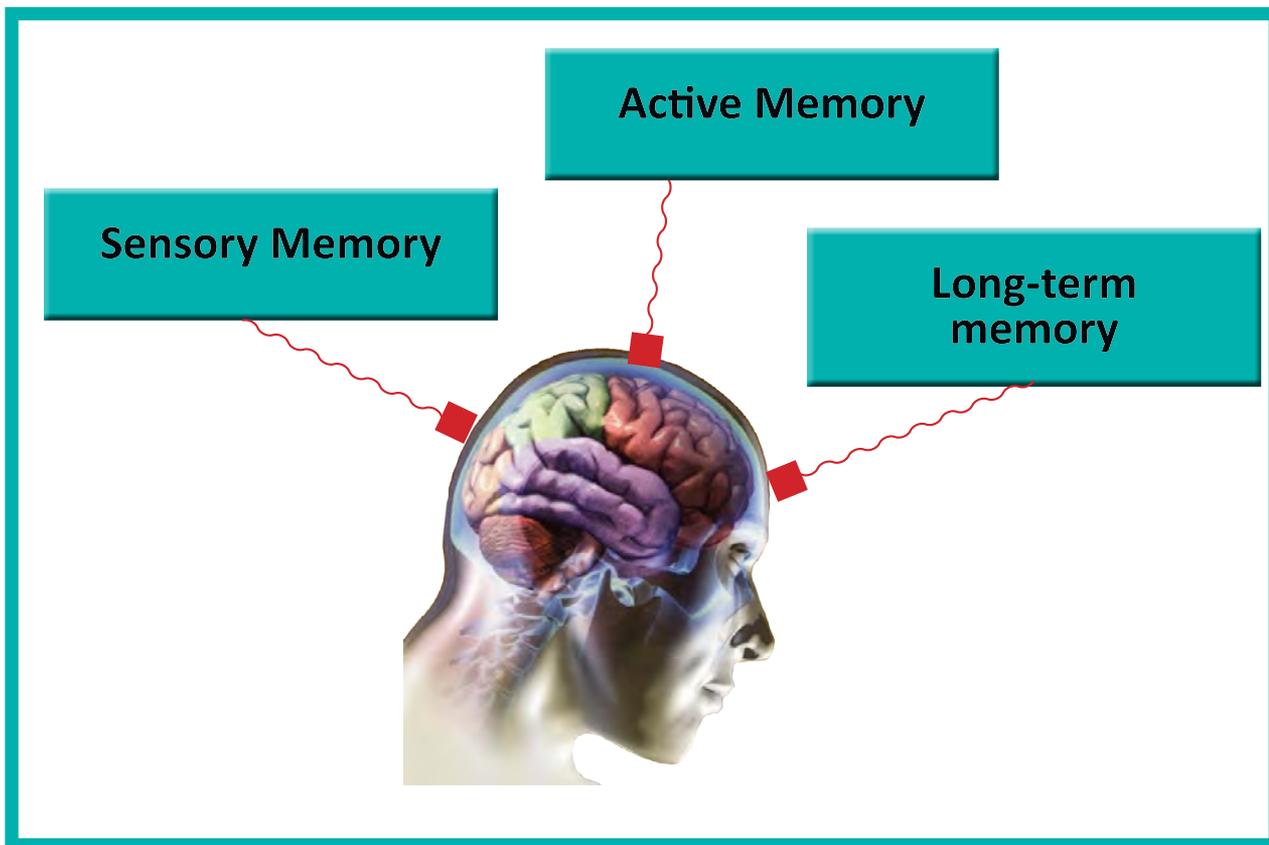
**Sensory memory** constantly assimilates information that we hear, see, smell, taste and touch. It can absorb large quantities but only for a very short time (0,2to 2 seconds) (Neill, 2000). If the information is important, it is filtered in different parts of the brain to process it according to the origin of sensory information.<sup>7</sup>

**Active memory** assimilates important information, draws attention to it and then prioritizes and edits it. This system can only handle five to nine fragments or pieces of information at once. One should avoid overloading the active memory with too much information, so it is necessary to fragment into short lessons and provide the opportunity to practice the new information.

Since the information in the active memory lasts only 12 seconds before being possibly discarded, the information must be moved to **long-term memory to be learned and used for personal and family benefit**. This new information should be related with experiences or past knowledge and be applied in a **significant practice** <sup>8</sup>

### Learning new information

Figure N° 20. Scheme of learning new information



<sup>7</sup> Medina, 2008, says that how this happens, how the information is filtered and coordinated in the brain, is not yet fully understood.

<sup>8</sup> According to Medina (2008) we have essentially three brains and each one has its role in learning: the logical thinking brain, the emotional brain and the survival brain. When there is too much stress the brain changes to the emotional and survival stages. As long as you feel safe, the brain changes to the thinking logic state, a state in which one learns more efficiently.



→ Compra tugetes  
para hacer rugas.

→ Compra  
tugetes  
para  
hacer  
rugas.



# CONCLUSIONS AND LEARNINGS ON PARTICIPATORY METHODS

## ANNEXES

## Conclusions and Learning

When introducing the Community Video, people often ask: ¿Why it is filmed?, ¿What for?, ¿Where do the filming will be taken?. Against this, it was necessary to show videos on other neighboring communities to consider them as a way to learn and teach others. The message was strengthened because the same people were the ones that made use of the cameras, choosing the stories they wanted to tell. Furthermore, when participants saw that someone of their community was filming, they were interested in participating and sharing their knowledge. Some elders expressed how much they have enjoyed filming their parents. All this reveals that the video is a tool valued by communities.

The use of video in the action-learning process on the four thematic topics, have been very useful, as it allowed us to show the cycle of work from local knowledge reflection, knowledge production in the workshops, testimonies, the information visualized with PAR techniques, such as drawings, maps and cards, photographs and implementation of consensual practices as appropriate. The videos are valued by the participants and their families as these show the valuable work they are capable to perform and how their contribution in the workshops is aimed at improving family and community life. These are also considered as a reminder that look quite often, what is constitutes in a mechanism of internalization and fixation of new knowledge and best practices. The community video, to be developed by everyone, also became a generator instrument of dialogue, favoring that mothers, fathers and grandparents can express their knowledge naturally, aware that they would build a knowledge for action-learning.



The process visualization was performed with techniques of Participatory Action Research (PAR) and the Participatory Processes Visualization (PPV), consisting of drawings performed by the participants.

These techniques promoted the grouping work, motivating the participation and are a constant reference that provides security for the participants, because they felt better expressed having as support the drawing or a phrase written on a card.

*“To work with drawings, we divided into groups; participating and each one making his/her contribution, although very smaller”.*

Participants of Alta Ticanoma 1 community.

*“When doing and seeing the drawings, as women, we learn more; it is recorded in our brain what foods are good and we can do the same in our homes”.*

Group of women in the community of Chacoma.

During the workshops, working groups, plenary and backstopping, people have learned to use and interact with technical and educational resources constantly used. Arguably, this has created an empowering effect on people, who in their language, have described it as *“kallpachakunchiq”* (strengthening us).

### Building the knowledge

The new information is a key factor in any learning process. However, it must be taken into account

the best way to inform and sensitize the people who have completed only a few years in the school, for it is difficult for them to understand simple messages or slogans. The visual and simplified approach used by the WN team with participatory methods allowed the participants to share their knowledge and skills in a friendly environment and express their doubts with a “repeat, I do not understand”. This enabled them to question and make them reflect and finally receiving the new knowledge. This approach also helped create the confidence that the transmitted information and recommendations were appropriate and sincere.

It has been seen it must always be planned properly the information to be transmitted, develop short messages, validated and translated into Quechua, as well as submit questions in a simple and concrete way. A visual approach should not lose sight of the present information in different languages, especially, in response to expectations of some male who can read and giving a high value on the written, and prestige to what they learn. It should be also considered that the heterogeneous expectations are always a challenge for facilitation.

For example, when implementing the thematic topic of Complementary Feeding, which consisted in dialogue on nutritious meals with local and outside products, it was found that data on nutritional intake and health benefits were unknown, mainly by male.

They, themselves, recognized that the information related to food (good feeding) is valuable and showed satisfaction to understand that it is applicable to feed families and not just children. In this regard, they also valued that World Neighbors has shared this knowledge with males, because other actors often work the feeding subject only with mothers or school pupils.



It is also seen that people are keen to learn, so they stop doing their important everyday to attend the workshop and dialogue during the backstopping. As many times, only one partner attends, for it is necessary to provide to workshop participants a teaching material with primary and striking information promoting the dialogue and exchange between spouses.

### ¿How are the participatory methods perceived by families participating in the process?

In the five communities, where participatory methods were used and implemented the thematic topics, the workshops that are the main strategy of the project are defined as “courses”; that is, the participants assume the workshop as a training, formation and learning activity performed within the community and throughout. In this context, in a simple way, the methods are called:

By the facilitators	Denomination given by the community
Participatory Action Research	← Drawings
Community Video	← Videos
Backstopping	← <i>Watunakuy</i> “visit and know how they are”

*“Although I do not listen well, I come to the courses because there is a possibility of learning and we can use the drawings.”* Domingo Ramos Mitma; Community of Lancaya, 74 years old.

## The PAR from the people perspective

In most of the testimonies of the participants, it states that drawings (PAR) help to distribute working groups, makes visible the persons and their contributions. Women value that during the “courses”, drawings have to be done because these allow them to exercise their fine motor skills and ability to express their knowledge and emotions.

Se ha visto que en los talleres donde se utilizó herramientas de la IAP bajo una modalidad de trabajo de grupos, las personas asimilan y se predisponen a plasmar su conocimiento y aprendizajes a través de los dibujos-textos y en el lenguaje que ellos acostumbran; ya que han logrado considerar el trabajo de grupo como algo propio y rutinario en el taller; por eso realizan dichas tareas en lugares preferidos por ellos, y tomándose el tiempo que la actividad y el propósito requiere.

It has been seen that in the workshops where PAR tools were used under a form of working group, people are predisposed to assimilate and translate their knowledge and learning through the drawing-texts and in the language they are accustomed; since they have achieved to consider the working group as their own and routine in the workshop, and it would not be possible the process of generating capacity in a context where years of schooling are low. In short, the drawings have helped men and women to speak in front of others in an open and trusting manner.



## The Community Video seen from the senses of the people

For people, the video is an activity and a result of “courses” they like and enjoy; as it is considered a good memory, it is capable to show their clothing/dressing, their socio cultural reality, their production plots representing a pride for the great physical and financial effort that demands them; so the video has a pleasing and sharpness to appreciate details; and watching them on their television, make them feel good and important.

*“Every day, my 4 year old daughter watched the video Sumaj Mikhuna, because in this video, we appeared and watching her it so much, she fully learned everything that the video teaches; now she tells me how to eat well.”* Fracilicia Villca, Community of Alta Ticanoma 1; 26 years old.



Women said that doing and seeing themselves in the video, that is one of the CV principles, we film and see ourselves”; they feel it helps their self-esteem, make them lose the ear and recognize that all shots and photographs taken during the workshops will be incorporated in a nice video.

In a simple way, the video is perceived mostly useful for learning and reflecting on the topics covered with them. The CV also raises the self-esteem of people due to the following aspects:

- Use little camera, which is rare and interesting;
- A means to remember what has been said and is better than just talking. That is, the other senses are involved in learning;
- It is a nice memory; where they appear dressed in special apparels, in showy or beautiful places, with an expression of happiness and healthy; is the image that it must be kept from them in the future;
- It shows the best and good knowledge of each family, but also improved, which facilitates reflection and mutual learning;
- Participating frequently in the video help to lose the fear of speaking.

People confirmed the immense value of the community video on motivation and action, but also recognize that if a video shows a beloved person who died or other person having rivalries in the community, the video will generate others emotions and even demotivation.

## Backstopping

It has been demonstrated and appreciated that backstopping has been a good tool.

For women, the backstopping is good as facilitators always have to invite and share some coca and some edible, also they perceive that during the backstopping, the learning deepens the thematic topics and can discuss on various topics; something that is quite appreciated by women is the friendliness, openness and responsibility with which they collaborate in the care of sheep and other jobs. For women, facilitators that make the visit, are not a burden or prejudice; perceiving that facilitators are there to learn from the field and from their reality; attitude which they had not experienced before with other projects and facilitators.



Males also reported that the backstopping is a method that they like very much, they feel that being in the routine work, facilitators palpable reality; for males this means upgrading their strategies and work difficulties because of the degree of effort and creativity demanded by their work; also male knows that with these elements, the context and options for improving family nutrition practices can better be analyzed.

*“The backstopping is more practical and not theoretical. It teaches us about food production. But most importantly, working together, the dialogue and sharing”.* Men of Chacoma community.

# Testimonials on the Application of Participatory Methods

## María Omonte F.

*Experience in Northern Potosi has been very special in my personal and professional life, as it has allowed me to confirm that there are three elements that enabled us to achieve significant results in regard to family and child nutrition in rural communities of Sacaca and San Pedro de Buena Vista: having men involved in all activities of the project has helped to expose his responsibilities in the growth of their children; taking into account the local knowledge has enabled us for reflection, questioning, and thus, to introduce more strongly the “scientific knowledge” that helped them to improve their nutrition; finally, the strengthening of confidence of and with participating families, has allowed us both to communicate more horizontal, empathic but also transparently. To generate this confidence, WN has used the methods described in this document: the video, visualization, PAR (Participatory Action Research) techniques and backstopping, without these we would not have achieved that mothers and fathers can listen to us and, even more, to believe in us.*



María Omonte Ferrufino.  
World Neighbor Bolivia office.

## Yesmina Cruz A.

*To work by using participatory methodologies is simply different from working with vertical methods, that is, methods that come from the top to the bottom, where there is not a dialogue, a sharing of knowledge. I had the opportunity to experience both and saw a marked difference, participatory methods allowed us to have more proximity with people and gain their trust and both the institution and the community are responsible of the objectives and results for its development. We learned to have a genuine interest in people and a lot of respect, because we learned more about them, their opinions, their experiences and their history. It's like someone ever said “introduce local knowledge in building development plans through participatory planning, is a boldness,” and I think definitely that using this type of methodologies allow us to find sustainable solutions.*



Yesmina Cruz Agudo  
Facilitator.

## Juvenal Ramírez Ch.

*I am Juvenal Ramirez, Agronomist and I like learning. Within the project, we had as methods the Participatory Action Research (PAR), the Participatory Processes Visualization (PPV) and the Community Video (CV), each one has its own tools or techniques (video, cards, drawings and backstopping). During the period of the project, I was able to convince me that the appropriate application of participatory methods provided me to approach to families, to create a horizontal dialogue with women and learn in depth part of their life. From local knowledge, both the facilitator and participants built an objective more understandable and sustainable at short-term. Participatory methods allow us to better understand the whole process, from the beginning to finish. Currently, I am convinced of the strengths these methods have and could have noticed changes in the attitude of the participants, self-esteem, expressiveness and others, both participants and my person as facilitator in this process.*



Juvenal Ramirez Chucata  
Facilitator.





## Annex 1. Project Evaluation Indicators

### Objective N° 1

To understand which are and how the knowledge and practices of fathers, mothers, grandfathers and grandmothers have been changed in the thematic topics: Family support, Diet Diversity, Breastfeeding and Complementary Feeding.

Indicator
<p><b>Indicator 1.1</b> At project closure, 100% of community events systematized in the four thematic topics produced by the five communities in the period from April 2010 to August 2013</p>

### Objective N° 2

To improve practices of Family support, Diet Diversity, Breastfeeding and Complementary Feeding in families of the intervention communities through the use of participatory methods.

Indicator
<p><b>Indicator 2.1</b> <b>(Family Support).</b> At project closure, at least 60% of mothers participating in the process report improvement on Family support in the last three months.</p>
<p><b>Indicator 2.2</b> <b>(Diet Diversity).</b> At project closure, the 60% of mothers and/or fathers report improvements in the family Diet Diversity.</p>
<p><b>Indicator 2.3</b> <b>(Diet Diversity).</b> At project closure, the 60% of families consuming tubers, grains, vegetables and fat during the week prior to the evaluation.</p>
<p><b>Indicator 2.4</b> <b>(Breastfeeding)</b> At project closure, 70% of mothers, fathers, grandmothers and/or grandfathers know key messages on Breastfeeding. Father, mother: 1 key message by stage; Grandparents: at least 1 message of BF.</p>
<p><b>Indicator 2.5</b> <b>(Breastfeeding).</b> At project closure, 40% of mothers with living children born in the last year claim to have given newborns breastfeed within the first hour of birth.</p>
<p><b>Indicator 2.6</b> <b>(Breastfeeding).</b> At project closure, 50% of children 0-6 months of age are exclusively breastfed for the last three days.</p>
<p><b>Indicator 2.7</b> <b>(Breastfeeding).</b> At project closure, 80% of children between 12-14 months of age continue to receive Breastfeeding according to the reminder of the previous 24 hours.</p>
<p><b>Indicator 2.8</b> <b>(Complementary Feeding).</b> At project closure, mothers, fathers, grandmothers and/or grandfathers know at least one key message about quality, consistency and frequency of CF of children between 6 to 24 months.</p>
<p><b>Indicator 2.9</b> <b>(Complementary Feeding).</b> At project closure, it has been improved by 20% the diversity in CF of children between 6 to 24 months of age who, in their meals, receive at least tubers, grains, vegetables and fat sources.</p>
<p><b>Indicator 2.10</b> <b>(Complementary Feeding).</b> Children from 6 to 24 months of age receive between 3 and 5 meals the day before the evaluation.</p>
<p><b>Indicator 2.11</b> <b>(Complementary Feeding).</b> Children from 6 to 24 months of age consume meals whose consistency is similar to "chjapu" or pito the day before the evaluation.</p>

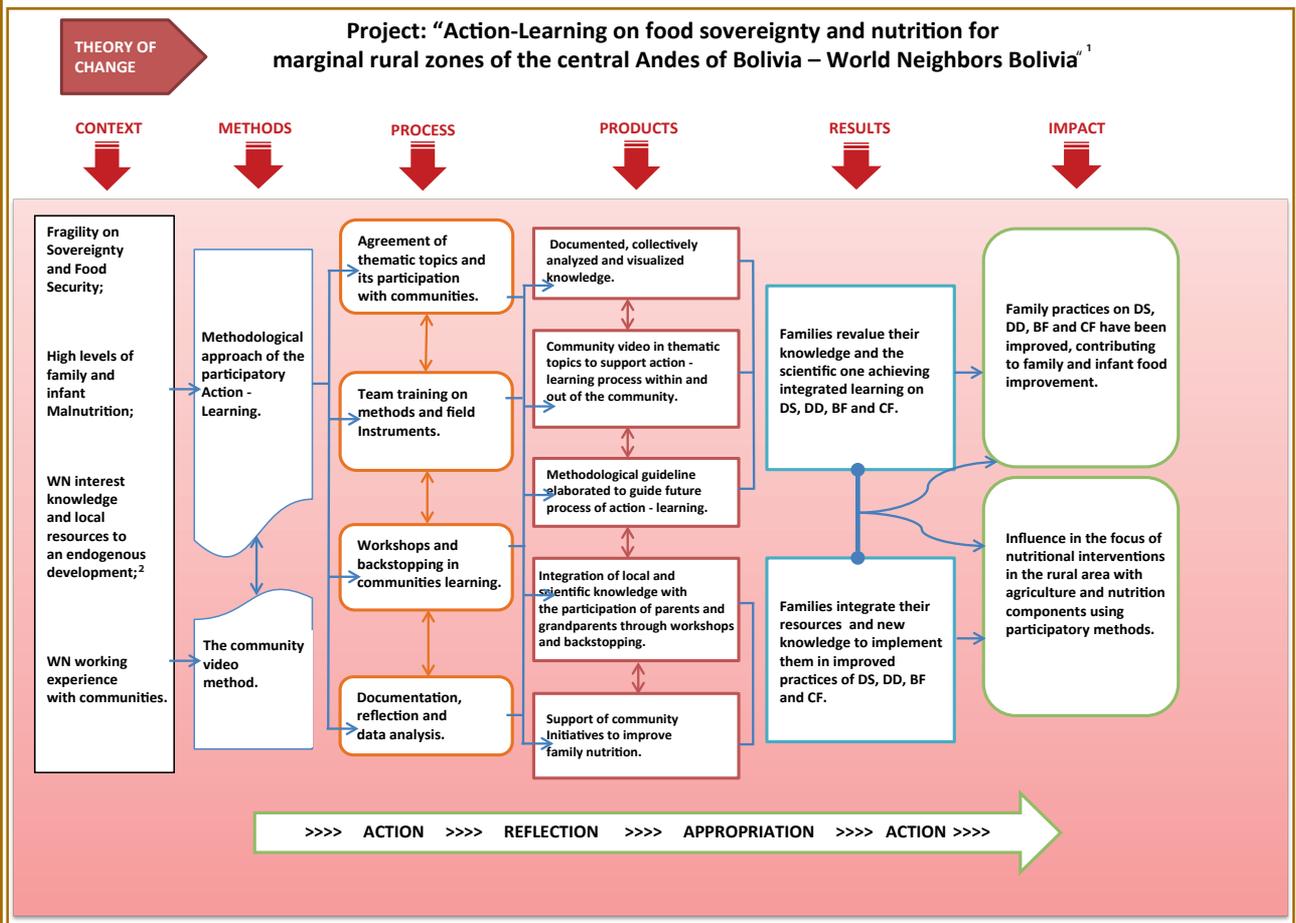
### Objetivo N° 3

Document, evaluate and systemize lessons learned during the project execution and promote its diffusion.

Indicator
<p><b>Indicator 3.1</b></p> <p>At project closure, lessons learned in the implementation of methods, have been systematized in a document for action-learning process focused on the 4 thematic topics.</p>
<p><b>Indicator 3.2</b></p> <p>At project closure, there is an article for publication in scientific journals and magazines;                      At project closure, there is a systematization of the main achievements, difficulties and process learning for each thematic topic;                      At project closure, there is a WN experience analysis in the process implementation.</p>

## Annex 2. Theory of Project Change

Figure N° 17. Scheme Theory of Change



<sup>1</sup> The Thematic Topics: Diet Diversity (DD): Family support (DS); Breastfeeding (BF); and Complementary Feeding (CF).

<sup>2</sup> The endogenous development implies: "the ability to transform the socioeconomic system; the ability to react to external challenges; the promotion of social learning; and the ability to introduce specific social regulation forms at local level enhancing the development of the above characteristics. Endogenous development is, in other words, the ability to innovate at local level." Garofoli; 1995.

## Annex 3. The Methodological Script

**Activity:** Knowledge workshop on Breastfeeding (BF).

**Objetive:** Documentation of Breastfeeding local knowledge.

**Recommendations:** During the event, there must always be a video camera and photo camera for audiovisual recording process with emphasis on photographs.

**Table N° 28. Example of a Methodological Script**

**Expected number of participants: 15**

Time Min.	Activity	Objective	Method: CV and visualization	Form	Dynamic					Materials	Responsible (s)	Notes
					1	2	3	4	5			
5	Welcome and Presentation	Welcome to all the participants	One facilitator welcomes and if the leader is present, then is given to him the word for the same purpose	Plenary						None	Juvenal	Here, it is included the presentation of new ones when existing
3	List of participants	Register the name of the participants	The name of the persons is registered as they arrive at the event	Plenary						Flipcharts, markers and chinchés	Rosario	
10	Conversation about how they are, how they have fared with planting and others	Break the ice, gain confidence and wait participants who are on the way	The question is asked to the group and conversation is initiated	Group						None	Juvenal	
5	Reminder of the previous workshop	Feedback and socializing what was done in the previous workshop. Visualize the sequence of topics in the intervention	Resume the previous workshop and feedback and socialize with the participants	Group						Flipcharts of the previous workshop, markers and chinchés	Juvenal	It is important to have participation of attendees
5	Objective and day agenda (or agenda and objective)	Visualize the sequence of intervention. Validates and the agreement of the objective and agenda of the day	Visualize in a flipchart and reach consensus around it	Plenary						Flipcharts, markers and chinchés	Juvenal	

### Topic development

5	Introduction	The prior socialization workshop and its relation with this activity is mentioned	Visualize in a flipchart the 4 variables inserting in Breastfeeding and Complementary Feeding, explaining that both topics will be addressed in the coming months	Plenary						Flipcharts, markers, masking tape and chinchés	Yesmina	
5	Groups formed by mothers, fathers, grandparents, youth, children	Organize the role documentation	Divided into groups	Group						Flipcharts, markers, masking tape and chinchés	Yesmina	
10	Question: ¿How do you think it should be a successful Breastfeeding?	Explain the question, what is to be done	Visualize and explain the question	Plenary						Flipcharts, markers, masking tape and chinchés	Yesmina	
60	Group work	Develop the documentation on BF	Free: Drawing, writing...	Group						Flipcharts, markers, masking tape and chinchés	Yesmina	If any group have more than 4 members, the group is divided
30	Presentation of group work	Socialize what has been worked with each group	Oral presentation	Plenary						Cards, markers, masking tape and chinchés	Yesmina	Display in cards and complement the drawing
10	Question: ¿Were there other practices different to these ones before? ¿Which ones?	To know the different practices in time	The question is asked to the group and conversation is initiated	Plenary						Cards, markers, masking tape and chinchés		Responses are displayed in a flipchart with the name of the participant
10	Question: ¿ Why do you think it has changed?	Investigate the reasons for changes	The question is asked to the group and conversation is initiated	Plenary						Cards, markers, masking tape and chinchés	Yesmina	Responses are displayed in a flipchart with the name of the participant
20	Question: ¿ Of all these practices, which do not contribute to good child nutrition?	Clarify why some are not so good practices	The question is asked to the group and conversation is initiated	Plenary						Cards, markers, masking tape and chinchés		

5	Close	Se motiva en la	Repetir lo más relevante de lo que se generó (del trabajo de grupos y las conversaciones finales)	Grupal					Tarjetas, marcadores, masking tape y chinchés	Yesmina	
10	Conclusions of the day	Ver: Sus impresiones de lo que se hizo, cómo se han sentido, de lo que hicimos/hablamos/ escuchamos hoy qué nos sirve?	Lanzar la pregunta y entablar una conversación	Grupal					Tarjetas, marcadores, masking tape y chinchés	Yesmina	
5	Evaluate the objective of the day	Discutir si se logró el objetivo del día, sí o no y por qué.	Se utiliza el papelote del objetivo y se lanza la pregunta: Cumplimos con el objetivo de hoy? Sí, no, por qué y se conversa alrededor de las respuestas.	Grupal					Tarjetas, marcadores, masking tape y chinchés	Yesmina	
5	The next event	Profundizar en las prácticas positivas de LM y su importancia en la alimentación y cuidado de niños y otros aspectos logísticos como la merienda, fecha, etc.	En otro papelote se pone la fecha, la organización de la merienda <b>que deben traer los participantes por la duración del evento</b> y las actividades del siguiente encuentro.	Grupal					Papelotes, marcadores y chinchés	Yesmina	
10	Method evaluation	Documentar sus percepciones respecto del uso del video y el objetivo propuesto.	Las caritas o la escala humana visualizando los comentarios.	Individual /grupal					Papelotes, marcadores, chinchés y adhesivos	Yesmina	
120	Snack	Alimentarse, compartir y reforzar mensajes sobre el contenido nutricional de los ingredientes de la merienda	<i>Ajthapi</i> comunitario, conversación informal y mensajes claves	Individual /grupal					Utensilios de cocina, fogón, verduras y otras guarniciones.	Todos	

343 minutes

**Note:** Night meetings are extremely important to evaluate the information obtained and to detail the information gaps for the next day of backstopping.





Participants conceive that mixtures are possible only in meals (common pot) and not so in snacks and separated and/or special meals.

We verified that when it comes to grinding pito, it is expected to be done by the male. And not everyone has fuller or mill. Also, we noted that people has technology to process their foods.

They said that pitos and somehow the pitos mixtures were from the time of our grandparents.

The nutrient mixtures should also consider products of the time. In this case, the green bean.

The message, after all, is that in the day, children should receive one mixture or separately. Suggestions to prepare it can be inquired.

We must work in willing to do it, since mixtures have not been part of their life; we will not find an ideal form and tailored to the families.

The method is very important because when revaluing, recovering people knowledge give them eager to learn. Before we thought as from the observations; not asked them. We tried to meet the objectives of the research or project.

The facilitating team is also improving handling groups and different formulas to form groups.

2. Describe responses and reactions of participants to the topic or method Detail these points characterizing them by name, age, gender, family situation or other condition	Evidence:	Code:
Seeing the roasted, they were very surprised and excited; this was used as a motivating factor to initiate dialogue and learning.		

**2. ¿How the event was developed?**

Upon our arrival, the community already knew that we would take the workshop, but while waiting for them, some families were visited.

Before starting the workshop, snack was prepared and shared.

We discussed on knowledge during the reminder

In working groups, the mixtures were prepared

Plenary

Strengthening

**2. ¿How the objective evaluation was conducted? and ¿what results were obtained?**

Reflection with the community on the advantages and disadvantages of what was done and what they saw work as good.

**2. What aspects will be important to be deepen in:**

Next workshop::

**Backstopping:**

- Ways of consuming beans and peas and how these are given to children in Complementary Feeding.
- In the case of Maria, it is very common to grind pitos and mix pea and wheat; because it gives flavor and it loves her family. They do not ground bean because it is hard. Besides, it makes us swell the stomach. The husband promotes the consuming of grains, because he does not like rice and noodles. Maria makes the comparison of her children with other children, and she thinks hers are at an advantage. Maria always takes out ingredients from the common pot and selects the best ones for the child.
- In the case of Gregorio, he claims that his children grew with valley products like maize and pea. He, for his little land, cannot grow peas or beans. It indicates that he does not have experience in mixtures. He claims that this swells the stomach, especially in pito but not as mote. In roasted and pito, the amount of protein is maintained. It is expected that in the child who will be born, Gregorio will apply the knowledge.
- In the case of Marcelo, he said that they do not have land (plot) to cultivate their varied products; that is why they consume only potatoes, chuño, rice and noodle. Vegetables, beans, peas can only be obtained from his mother vegetable garden.
- Possible viable mixtures in pitos and meals.
- Victoria, she told us that pitos are consumed separately, for example the q'ispiña is made only of grain and not conceived with mixtures.
- Maria told us that to grind bean or pea, it must be mixed with wheat, as a way of facilitating.
- Gregorio affirmed that they only grind ch'aska, therefore he has not experienced the mixtures.

**General comments:**

During the backstopping, effects of the workshops are observed when husbands help with chores wives and vice versa. The treatment between spouses and family. They call and listen to us.

When we refer to Family support, we must take into account the older children as caretaker of young children. This has effects on exclusive Breastfeeding. It is recommended to work with school nutrition themes.

Migration becomes more vulnerable to people from marginalized communities as they go to places where due to the economic pressure, they can only buy noodles and rice.

We have seen that it is enriching when we are with husband and wife.

**Facilitator:** ..... **Co facilitator:** ..... **Systematization:** .....

Name: Name: Name:

**Final Review:** .....

Name: .....

## Annex 5. Backstopping Materials

File Code: CC, CF3, Cm, 09, 02, 2013

### FACILITATOR FIELD NOTEBOOK (Backstopping or other informal activities)

Table N° 30. Example of a Field Notebook used in backstopping

<b>Date:</b> 21/02/13	<b>Community and place:</b> Alta Ticanoma I	<b>Facilitator:</b>	<b>Starting time:</b> 08:30	<b>Ending time:</b> 14:00
<b>Activity carried out with the family:</b> Footprint of onions, in Maria and Pedro farm.	<b>Thematic topics:</b> <ul style="list-style-type: none"> <li>Family support.</li> <li>Diet Diversity.</li> <li>Other.</li> </ul>		Breastfeeding.	Complementary Feeding.
<b>1. Priority themes for backstopping</b>	<b>2. Person or family accompanied</b>	<b>Total of members</b>	<b>Children under 5</b>	<b>Elders</b>
What type of mixtures they make with cereals.	María and Pedro Villca.	6	2	
<b>3. Briefly describe the socio-environmental context in which the backstopping was performed:</b>				
<p>First, we were in the house of Maria and then we went to one of her farms that is at half hour walking; then to another farm at the west of Ticanoma, crossing the river, where they grew maize.</p> <p>I was at home with the family, ate rice with beans, eggs and onions, while in another pot they were cooking freshly harvested beans. I liked being there, I noticed an atmosphere of great trust between parent and children, girls were saying with confidence anything they did not like, from my point of view, they seem like a nice family, but although I felt Pedro with a little alcohol, I could not tell anything. Maria and I then went only to the farms.</p>				
<b>3. Describe the contents of the dialogue with the person or family:</b>				
<p>At home, while we ate we talked about how they felt to be elected as authorities of their community. According to the organization, both spouses must walk together, attend conferences, appeals to community meetings and solve problems that arise there. Pedro and Maria had planned to migrate this year to Cochabamba and raise their children there, for now they will delay their plans.</p> <p>"I did not want my husband to be a leader, even my children are young and need attention, it is a walking problem at times, it is difficult to find car and I have to go carrying my 8 months baby; but Pedro is going to help me so," says Maria, meanwhile Pedro says that now that there is no a Second Mayor, he as communal mayor is in charge of everything and that means a lot of responsibility.</p> <p>Maria had very interesting comments on mixtures, she said she always mix wheat with pea and also she usually prepare pito of bean which do not swell the stomach of any of her children, "my kids do not like rice or noodle, much less my husband, which encourage me to cook meals with wheat, maize and other products that grow here. I notice the difference between my children and the children of the neighbor, their children usually only eat rice and noodles, not eat grains and consequently do not progress at school, however mine are fine," says Maria.</p> <p>I asked her what she was planning to do if she would migrate to Cochabamba, as cereals and legumes are more expensive than other less nutritious foods. She said; "I will never forget my food especially now that I know how nutritious these are, Pedro and I have planned to plant maize and beans in the field we have in Cochabamba, in the same way here, we will be constantly traveling to take food from here. I liked the Maria's conclusion and the solution she is planning to do, however I think it's hard to live in two different places, especially if they are separated by long distances.</p> <p>Finally, I asked her how she felt with the workshops and the methods that we use, she said she liked them only some parts that she did not understand yet and that still she was afraid to comment at the workshops.</p>			<p><b>¿How does reinforcement of knowledge and practices were performed?</b></p> <p>When Maria spoke that she was decided to migrate because there were not too much lands in Ticanoma, we talked about the importance of not forget the knowledge that she has now, among them: the importance of feeding children well and introduce healthy foods into their diets and nutritious.</p>	

3. What learning or findings you found in relation to priority subjects or other important subjects?	Evidence	Code:
<p><i>First, I think that if families make nutritious mixtures and are part of them, knowledge about mixtures will help them to prepare these more frequently than usual.</i></p> <p><i>Families migrating to other places, especially cities, are more vulnerable to negative changes in their food, because the cities are saturated with "junk" food and easy access for people with limited resources.</i></p> <p><i>A learning so far and the methods we use is: it is true that we have used more participatory methods, however we have not been given the necessary attention to them, we have focused efforts on many activities and have not found time to reflect on each tool, we are content with the scripts which do not necessarily show the detail and the use of each analysis tool with the audience. Even mothers do not participate and feel fear. I think tools of PAR and CV need reflection as team.</i></p>		

3. Points to further deepen or points that were pending:

**Facilitator:**  
Name:

**Systematization:**  
Name:

**Final Review:** .....





**RECIPE OF NUTRITIOUS MEALS PREPARED  
IN COMMUNITIES**

# Chapu of wheat and/or barley

The *chapu* of wheat is one of the ancestral foods that is still consumed in communities and is liked by children and adults; it is both consumed in abundance and scarcity periods. Formerly, it was prepared with barley but it was moved with the appearance of wheat; only in the community of Lancaya, barley is still consumed.



## Barley contains:

11,8 mg/100 g of Protein;  
54,0 mg/100 g of Calcium;  
5,8 mg/100 g of Iron;  
1,12 mg/100 of fat.

## Wheat contains:

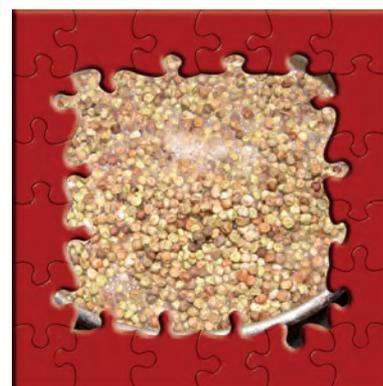
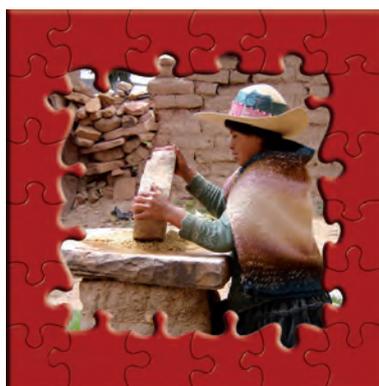
9,31 mg/100 of Protein;  
54,0 mg/100 g of Calcium;  
3,3 mg/100 of Iron;  
1,33 mg/100 of fat.

## Ingredients:

- Wheat flour and/or toasting barley
- Boiling water with fat and salt (also it can be prepared with herbs as the “muña” and sugar)

## Preparation:

- Toast wheat (or barley) until it has a consistent burnt;
- Grind either at home or with an electric mill;
- Pour the flour (pito) in the bowl in which it will be consumed;
- Boil water with salt and fat or with natural flavoring (muña) and sugar;
- Pour the boiling water either in the bowl or directly to the plate and mix;
- Consume hot.



# *K'ispiña* of wheat

The *K'ispiña* of wheat is one of the ancestral foods generally enjoying the delight; is particularly appreciated for the work before demanding physical effort.



## **Wheat contains:**

Crude wheat;  
9,31 mg/100 of Protein;  
54,0 mg/100 of Calcium;

## **Ingredients:**

- Wheat flour;
- Salt;
- Pieces of fat.

## **Preparation:**

- Prepare the quantity of wheat flour to be used;
- Boil water to mix the flour;
- Knead the flour with boiled water and salt;
- Make the *K'ispiña* molds;
- Place the molds in a pan with boiling water for 15 minutes approximately, until the molds are floating to the surface;
- Squeeze excess water and pour into a bowl;
- Served hot.



# Phisara of quinoa

The *Phisara* of quinoa is a nutritious food very coveted by families; their preparation is laborious and a nice food for family enjoyment is obtained.



## Nutritional quinoa value:

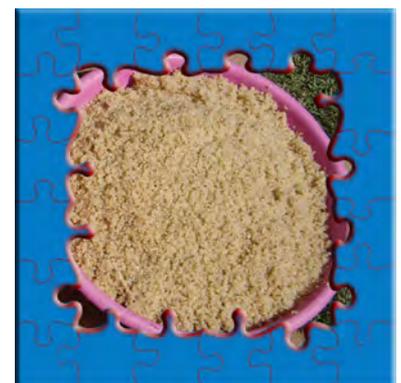
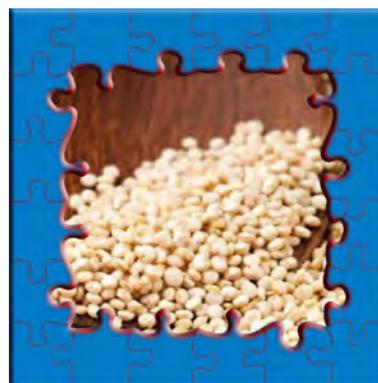
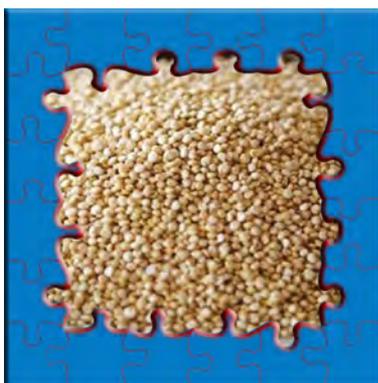
2,97 mg/100 of Protein;  
26,0 mg/100 of Calcium;  
2,6 mg/100 of Iron;  
2,45 mg/100 of fat.

## Ingredients:

- Quinoa;
- Salt.

## Preparation:

- Toast quinoa in a pot or pan until it gets a uniform color (without any other ingredient);
- Pass the quinoa through a fuller mill to loosen the peel;
- Vent to remove the peel and wash more easily;
- Wash with abundant water to be sure that there is not more foam;
- Cook in a pot with the quantity of water needed;
- Serve hot.



# Grain Bread

Grain bread is made by mixing flour of wheat and barley. It is the most eaten food in the time of All Saints. It is collectively prepared since few families have the fire wood oven for baking.



## Nutritional bread value:

3,49 mg/100 of Protein;  
16,0 mg/100 of Calcium;  
5,7 mg/100 of Iron;  
5,87 mg/100 of fat.

## Ingredients:

- Wheat flour;
- Salt;
- Yeast;
- Boiling water.

## Preparation:

- Grind the flour;
- Knead with all ingredients;
- Fermenting the mass;
- Heat the oven with enough firewood;
- Shape breads;
- Baking;
- Cool and consume.



# Lawa of maize

Lawa of maize is a very traditional food of communities and it can be prepared on the basis of almost all Andean grains; the lawa of maize is cooked in lower altitude communities where this cereal is produced.



## Nutritional maize value:

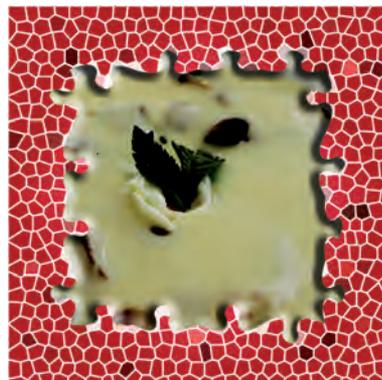
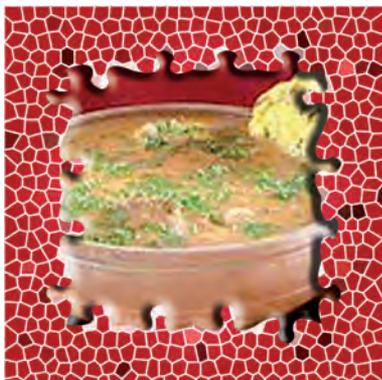
8,59 mg/100 of Protein;  
9,0 mg/100 of Calcium;  
4,2 mg/100 of Iron;  
4,26 mg/100 of fat.

## Ingredients:

- Maize flour;
- Vegetables;
- Fat;
- Potatos;
- Beans and/or peas.

## Preparation:

- Grind the maize until it is uniformity;
- Dilute the flour into cold water and wash;
- Boil water with salt;
- Add vegetables, fat, potato and other ingredients;
- Add the diluted maize to the pot;
- Simmer;
- Serve hot.



# Murqha of wheat

The *Murqha* of wheat is one of the foods most appreciated by the family. It is mainly consumed as the first meal of the day before a hard day's work.



## Nutritional peeled wheat value:

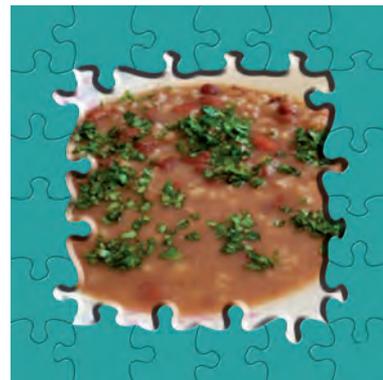
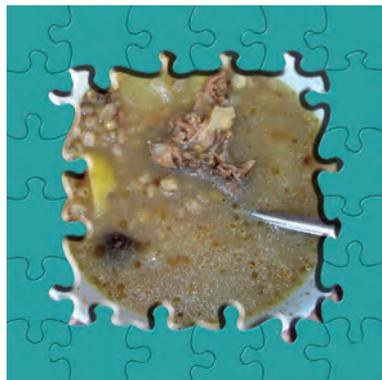
10,2 mg/100 of Protein;  
53,0 mg/100 of Calcium;  
13,0 mg/100 of Iron;  
1,3 mg/100 of fat.

## Ingredients:

- Peeled wheat;
- Vegetables;
- Fat;
- Potatos;
- Beans and/or peas.

## Preparation:

- Soak wheat;
- Shroud wet wheat in a fuller
- Dry the shrouded wheat and then venting to remove the husks;
- Add clean wheat into the pot;
- Add vegetables, fat, potato and other ingredients;
- Serve hot.



# Huminta of maize

The humintas of maize are prepared in the time of fresh maize and is appreciated by all family. It is mainly consumed in lower altitude communities where maize is produced.



## Nutritional *huminta* value:

2,6 mg/100 of Protein;

9,0 mg/100 of Calcium;

1,0 mg/100 of Iron.

## Ingredients:

- Maize;
- Salt.

## Preparation:

- Collect the maize;
- Thresh and grind in a fuller for its uniformity;
- Prepare the maize leaves and straps to tie the humintas;
- Add clean wheat into the pot;
- Place in a pot with boiling water;
- Consume hot or cold.



# Wathía of potato

The *Wathía* of potato is a very traditional food of the communities because it is prepared in the same location of harvest, where the potato is baked in charcoal in the firewood heated earth. It is an appetizing food for all families and consumed frequently in the potato harvest time, is commonly consume only with salt, *phasa* or meat.



## Nutritional value of the wathía of *Yana imilla* (native potato):

2,14 mg/100 of Protein;  
4,0 mg/100 of Calcium;  
1,5 mg/100 of Iron;  
14,0 mg/100 of Vitamin C.

## Ingredients:

- Fresh potato;
- Salt or *phasa*.

## Preparation:

- Put together potatoes or potato varieties to cook;
- Build a *wathía* (oven clods);
- Stir with enough firewood until obtaining the optimum temperature that is when the top of the *wathía* turns red;
- Fill the *wathía* with fresh potatoes (also oca and/or isaño can be placed);
- Overthrow and bury the *wathía* on the potato;
- Cook the potatoes for 1 hour under the earth;
- Unearth the *wathía* and remove the potatoes to a bowl;
- Consume hot or cold.



# Cookies of wheat and tarwi

Cookies were prepared from household demand. Its preparation is resembled to a pancake.



## Nutritional value:

3,49 mg/100 of Protein;  
16,00 mg/100 of Calcium;  
5,7 mg/100 of Iron;  
5,87 mg/100 of fat.

## Ingredients:

- Wheat flour;
- Tarwi flour;
- Salt or sugar;
- Oil;
- Yeast.

## Preparation:

- Mix the flours: 70% of wheat flour with 30% of tarwi flour;
- Knead with flavored water (herbal) mixing with yeast, warm water and salt;
- Mould the cookies;
- Bake until a consistent color;
- Serve hot or cold.



# Phiri of wheat

The *Phiri* of wheat is often consumed in homes; some children still take it as snack to school and it is a very appetizing meal for the whole family.



## Nutritional value:

2,28 mg/100 of Protein;  
6,0 mg/100 of Iron;  
5,87 mg/100 of fat.

## Ingredients:

- Wheat flour;
- Salt;
- Oil.

## Preparation:

- Prepare wheat flour to be used;
- Heat oil in a pot or pan and toasts wheat flour;
- Pour in a pot the hot water to the toasted flour;
- Mix the flour until you obtain the *phiri*;
- Serve hot or cold.



# Soup of *okhoruro* (Andean watercress)

The soup of *okhoruro* is consumed annually by the families of the Cayastía community in the rainy season (January to March). For a long time, it was considered by the community as a native vegetable until other vegetables appeared in local markets; therefore, it is best known for the elderly.



## Nutritional *Okhoruro* value:

The fresh *Okhoruro* (Andean watercress) has 1,05 mg/100 more than chard.

It also has 0,45 mg/100 of zinc, while chard does not.

Dehydrated has 156,79 mg/100 g of iron.

## Ingredients:

- *Okhoruro*
- Potatos
- Chuño;
- Peeled wheat or barley;
- Fat;
- Salt.

## Modo de preparación:

- Collect fresh *okhoruro* in the quantity required;
- Wash with running water the leaves and stems;
- Defoliate and select the most tender stems;
- Peel de grain or wheat;
- Prepare the other ingredients (chuño, peeled potato);
- Boil water in a pot with grease;
- Add all the ingredients, including the *okhoruro*;
- Cook and serve hot.



# Sajta of papalisa

The papalisa is one of the most appreciated products by communities for its pleasant taste in foods like the “*lisas sajta*”.



## Nutritional *papalisa* value:

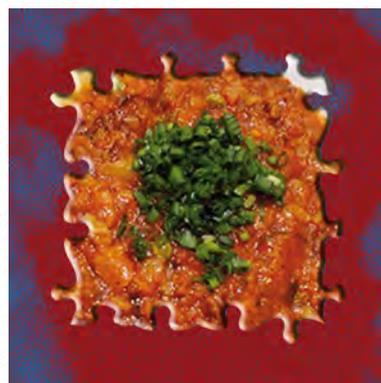
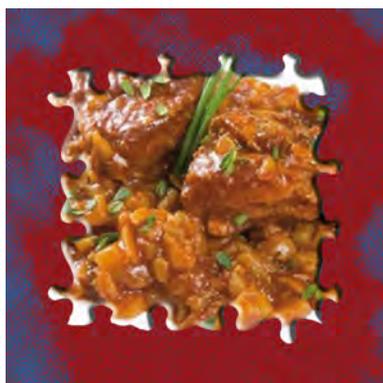
1,71 mg/100 of Protein;  
6,0 mg/100 of Calcium;  
5,0 mg/100 of Iron;  
84,0 mg/100 of Vitamin A.

## Ingredients:

- Papalisa;
- Potato;
- Salt;
- Fat;
- Vegetables to taste.

## Preparation:

- Select and wash the papalisa;
- Cook the potato;
- Prepare the other ingredients for the stew ;
- Once the papalisa is cooked , crush it in a fuller;
- Mix the crushed papalisa with the other cooked ingredients;
- Serve hot.



# Doughnuts of wheat, maize, rye and white flour

The doughnuts were already known and consumed by households; however most were made of white flour; the project promoted the preparation of buñuelos with local flours:



## Nutritional value:

3,49 mg/100 of Protein;  
12,1 mg/100 g of Protein;  
8,59 mg/100 g of Protein;  
5,7 mg/10 g of Iron;  
5,87 mg/100 g of fat.

## Ingredients:

- Wheat flour;
- Rye flour;
- Maize flour;
- Salt or sugar;
- Oil.

# Charque of sheep



## Nutritional value:

50,3 mg/100 of Protein;  
53,0 mg/100 of Calcium;  
3,9 mg/100 of Iron.

## *Thayacha* of wheat



### **Nutritional value:**

9,31 mg/100 of Protein;  
54,0 mg/100 of Calcium;  
3,3 mg/100 of Iron;  
1,33 mg/100 g of fat.

## **Peach (fresh and dried fruit)**



### **Nutritional value:**

13,25 mg/100 of Vitamin A;  
14,8 mg/100 of Vitamin C.

## Yellow Tuna



### **Nutritional value:**

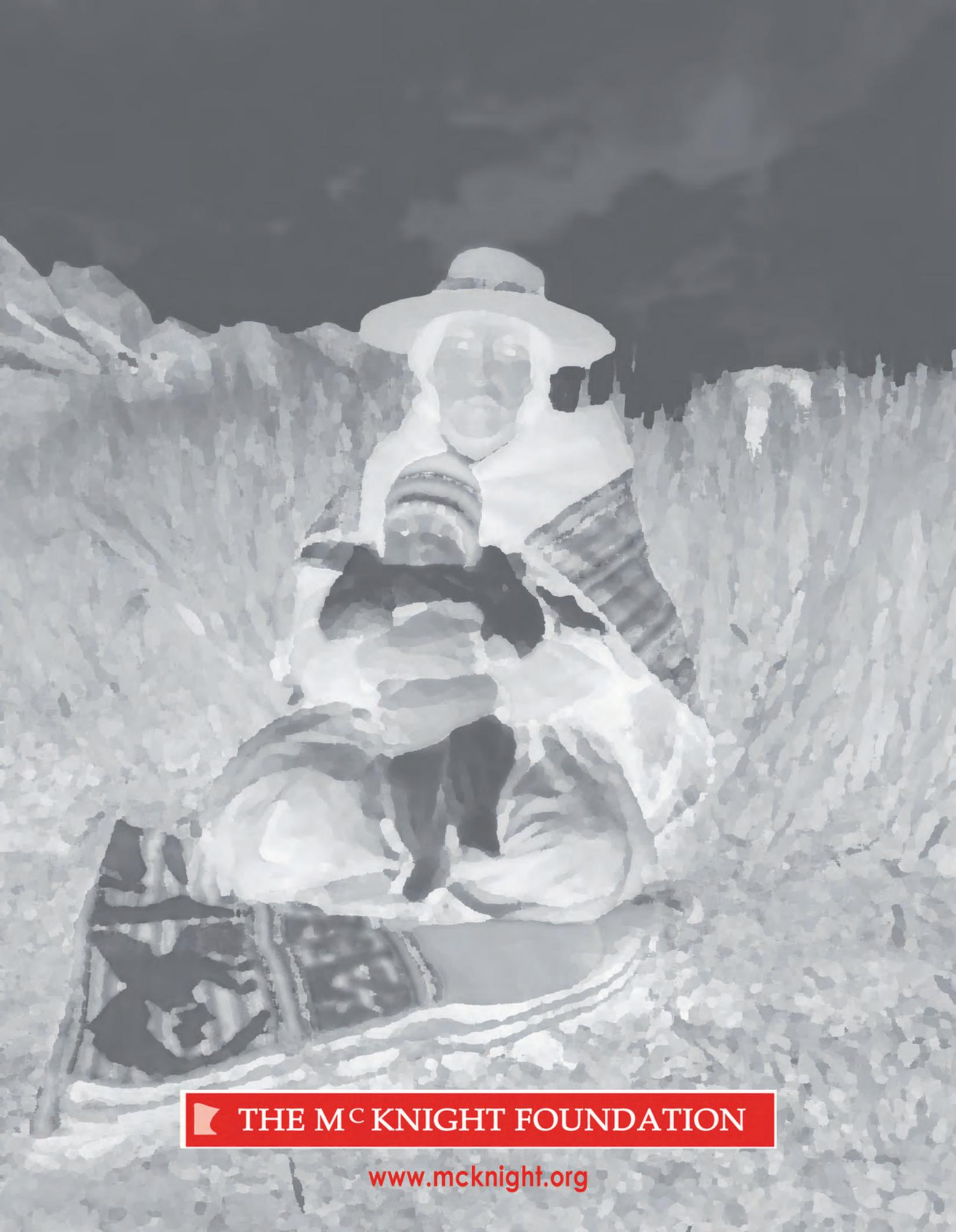
33,82 mg/100 of Calcium;  
17,5 mg/100 of Vitamin A;  
0,48 mg/100 of Iron;  
1,06 mg/100 g of Proteins.

## Chuño (dehydrated potato)



### **Nutritional value:**

3,49 mg/100 of Protein;  
16,00 mg/100 of Calcium;  
5,7 mg/100 of Iron.



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