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# *Reform Social Reform in the Andean Region. Puno (Peru)*

Working with People: Planning  
Experiences in Latin America and  
Europe

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"Working with people"  
Un método de éxito para el desarrollo



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2011

CASE STUDY

## **Chapter 4. Social Reform in the Andean Region. Puno (Peru)**

In this chapter the first Latin American study case will be presented. The **UIDRS<sup>1</sup> Unit** from the **Department of Rural Projects and Planning** of the Polytechnic University of Madrid<sup>2</sup>, conducted an evaluation of a rural development program implemented in the rural region of Ouno Peru. The program was into the spanish founding contribution to the CGIAR<sup>3</sup> network and was implemented bu the International Potato Centre (CIP)<sup>4</sup> (research centre which belongs to the network). The same as in the previous case, this case is presented as a study model of Social Reform. Like all the real case studies it can be observed that this case does not assume a pure planning model, but adapts itself greatly to the focus of the Planning as Social Reform.

### **4.1. Presentation**

Peru represents a social, economic, and politic situation representative of a country which is developing and also shows unfairness in terms of distribution of riches like the scarceness of means to promote development in the disadvantaged sectors of the population. According to the poverty map in 2000, it is calculated that 77.5% of the population is in poverty and 49% in extreme poverty. Numerous indicators exist that refer to the population's situation, for example the fact that 56% of the population lacks a basic water service, 81% has difficulties reaching sanitary services and 68% lack a regulated electric supply (Ministry of Agriculture, 2003)<sup>5</sup>. This situation looks aggravated in the poorer zones of the country<sup>6</sup> like in the case of the region of Puno, which deals with one of the poorest rural areas in the country. The socioeconomic and biological indicators classify the zone as extremely impoverished. Since some years ago, various institutions, directed by the CIP (CGIAR) are looking for the way to incorporate actions so a sustainable socio-economic development is achieved in the region.

The major problems of the plateau<sup>7</sup> are both environmental and socio-economic. The climate is one of the main restrictions (frequent cold snaps, abrupt topographic changes, and the inappropriate use of water impacts fundamentally on a low

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<sup>1</sup> Spanish acronym of: Unit of Innovation in Sustainable Rural Development

<sup>2</sup> As explained at the presentation of the part two, the researches of the UPM integrated an independent research team. This team was originally named UIDRS and at year 2006 changed its name to GESPLAN team. In this chapter we keep the name UIDRS because that was the name of the team when de related case study was done.

<sup>3</sup> Consultative Group on International Agricultural Research, Since now on CGIAR

<sup>4</sup> Since now on CIP. As we can see below CIP belongs to CGIAR research network

<sup>5</sup> Ministry of Agriculture, 2003. Technical financing report, Experimental station Illpa, Puno.

<sup>6</sup> In chapter 11 of this book, a development initiative is presented in the suburbs of Lima, which is seen as, along with the poor rural areas, the other big area of poverty in the country.

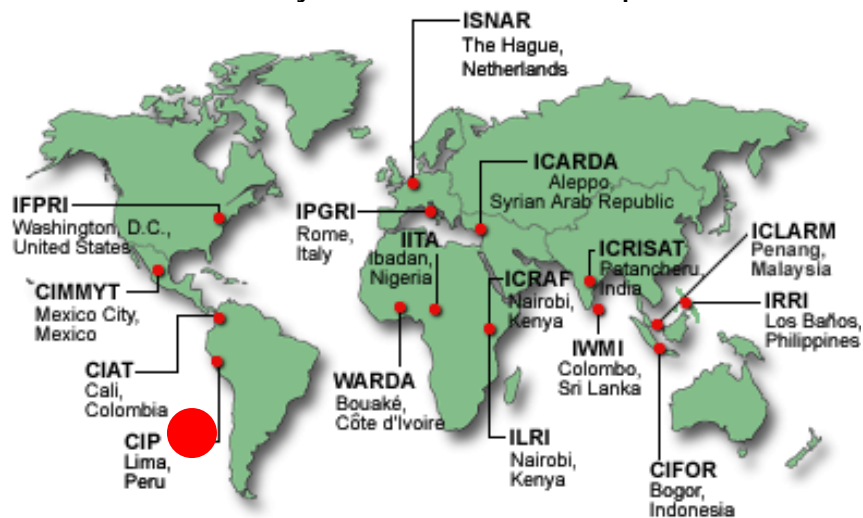
<sup>7</sup> In the zone other international cooperation projects exist focused on the reduction of poverty through productions, transformation, and commercialization of the farming products. The "Socio-Economic development in the highlands of the Peruvian Andes through a more efficient livestock productivity" project has been financed by the Spanish Agency of International Cooperation, AECI, and executed together with the International Center of the Pope, CIP and the Center of Investigations in Natural Resources and the Environment, CIRNMA.

production of seasonal crops.) The low production and productivity of the soil – which is constantly under a process of erosion, because of water and human activity - makes the diversity of activities necessary in the search of complementary profits. In socio-economic terms the growing of demographic population increases pressure on the earth and unemployment, and therefore leading to low income for a very low production. However, farming potential exists, which could be promoted through production options with the right technology.

Puno has a surface area of 71,999 km<sup>2</sup>. It is the fifth biggest and most populated area in Peru and third in poverty. It has a population of 1247,494 people with a human development index of 0.51 (HDI) of which 56.3%, 67.7%, and 81.0% have no access to water, electricity, or sanitary services respectively. Its population density is growing due to the migration from the high zones towards the central populated areas of Juliaca and Puno and from these zones towards the three zones indicated in the image 4.1 below. The circled area indicates the zone where the project has influence. Migration occurs due to the demanding life conditions on the plateau<sup>8</sup>. This migration has caused high amounts of pressure on the central populated areas as they are unable to offer adequate services and opportunities and therefore suffers an increase of urban poverty. The situation in the high Peruvian plateau is representative of other existing poverty situations in the Andes region which are a matter of priority and where the southern area development initiatives are aimed towards.

Faced with this situation, the World Bank, with 54 years of experience in sustainable development, counts on various connected institutional structures to guarantee a better efficacy in its development projects and fight against poverty; between these structures the CGIAR, the Secretary of the World Environment Foundation (WEF) and the Help to Poor Population Consulting Group (HPPCG). With a selective politic and a continuous dialogue, the World Bank is supported by the associations that are most efficient or have more resources (World Bank, 1992). As James D. Wolfensohn of the World Bank said, we are learning to listen more and to collaborate better with governments and people that we serve and for those who we work for in the local and international community (Wolfensohn, J. 1999).

**Image 4.1: Location of the CGIAR System Centres and that Emphasize the ILcation of CIP.**



Source: International Potato Centre

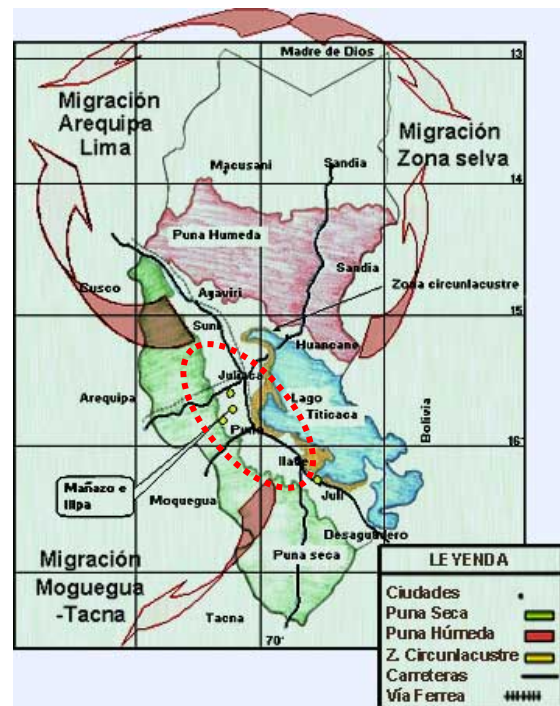
<sup>8</sup> See the reference to meteorological conditions in diagram 5.2.

The **International Potato Center** is an international organization dedicated to agricultural investigation relation to roots and tubers and to the management of natural resources. It is part of the CGIAR that has the responsibility of monitoring and evaluating the quality of science of the CIP and its relevance to the CGIAR's goals of reducing poverty and conserving natural resources.

**Image 4.2: Case Study Area**

In the year 2003, the CIP completed a vision exercise which involved the assigning of the seven development priority challenges that represent eight UN Millennium Development Goals. These challenges can be summarized to the reduction of poverty and hunger, improvement of human health, above all mothers and children, sustainable development in rural systems and improvement in access to new technology.

The **UIDRS Unit**, as it has already been exposed to these cases, possesses comprehensive experience related to the planning and evaluation of rural development initiatives, and was involved in the intermediate phase of the project for the execution of follow up evaluation work. Tuhs UIDRS joined the "Reductuin of Poverty in the High Andes Region project" (RPHA Project) to direct the evaluation proces.



Source: International Potato Centre

## 4.2. Case Study Context

As the previous diagram showed, the areas of Mañazo, Illpa and Illave are located in the environment of Lake Titicaca, in the middle zone between the dry and wet areas of Puna, along one of the main communication routes of the region. The Mañazo zone is located the furthest away from the lake and the closest to the dry area of Puna, which presents small agro climatic differences compared to the other considered zones.

### 4.2.1. Bio-physical Characteristics

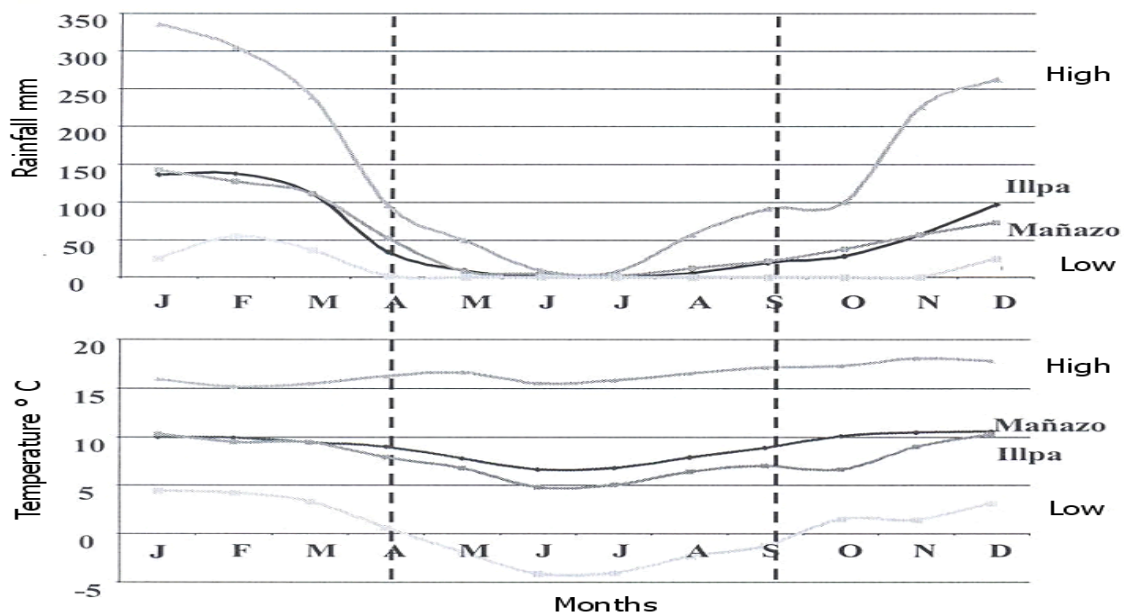
The following chart shows the main bio-physical characteristics of the area of project intervention. In both zones, it is possible to indicate climate as a determining factor in farming production. As you can see in the diagram, the variety of climate throughout the year generates a high production risk and as a consequence brings about aversion from producers towards innovative technology, maintaining traditional methods due to fear of possible production loss.

The wet season occurs from October to March and the dry season from May to August, in which it is impossible to cultivate, the months of April and September can be considered as a transition period.

**Image 4.1: Characteristics of the Mañazo and Illpa Zones**

Zonal Bio-physical Characteristics	Zones	
	Mañazo	Illpa
Location and altitude	Mañazo, Puno, 15°48'00", 70°03'60 at 3,926m	Paucarcolla, Puno, 15°10'45", 70°04'25 at 3,880m
Distance in km to Puno	44 km	24 km
Rivers and flows	Conaviri and Quipache, both flow from the Illpa river	Illpa
Ecological Zones	Suni and Puna. Work emphasis in Suni with a semi rainy/cold climate	Suni. Many fields susceptible to floods. Frigid, windy, and freezing climate in dry season. Hot sensation during the day
Soil	Dark color, clayey texture, moderately neutral pH, good fertility and drainage	Drab to dark color, belonging to Titicaca, clayey texture, moderately acid to neutral pH, good fertility and regular drainage
Rainfall	636 mm/year. 75% is produced in the rainy season (November-March). The dry season includes May-August and the months of April, September, and October are considered as transitory.	649.8 mm/year
Temperature	8.9 °C average. Varies between 0 °C and 15 °C	7.9 °C average, with minimum of -0.6°C. Varies to 17 °C
Main crops	Potato, quinoa, beans, barley and native/cultivated forage	Potato, quinoa, barley, native forage and cultivated pasture
Livestock	Bovine, ovine, alpaca	Bovine, ovine

Source: RPHA Projet



Given the dependence on the climate and the severity of this, which does not allow an extensive cultivation period during the year, the option selected by farmers is stock, as it reduces the associated risks to the changing climate.



Although the correct development of field vegetation also depends on climate, this is not related to the final product, but is used to fatten stock. The possible climate damages suffered are reduced by the management of stock, which is the final product.

#### **4.2.2. Target Population Characteristics**

The farming population in the Mañazo area is 332 which are separated into seven centers: Huilamocco (100), Canllacollo (36), Añazani (50), Huancarani (40), Chancarani (60), Moroquita (20) and Acopata (25). In Illpa the population is composed of 290 families grouped into two centers or communities: Yanamocco with 84 families divided into two sectors, (south and north) and Moro, with 206 families grouped in five sectors.

**Image 4.3: Research Team Meeting with Local Communities Representatives**



Source: GESPLAN Group

The social structure and territorial location of the individual producers (families) the farming communities and the associate companies arose from farming reform during the last quarter of a century. Also, other organizations exist for production, like the committee of quinoa producers, irrigation committee, and medium farming producers association. Four types of social organizations have been detected. These are:

- **Communal Business:** The group of Canllacollo is a communal Company that is run according to Peruvian legislation<sup>9</sup>. Its organic structure is composed of an administrative board – president, secretary, treasurer, and members – that meets weekly to program joint activities. Currently there is no manager and this role is distributed between its members. Despite the legal side of the company being a communal business, in practice the production management is carried out in a communal way.
- **Farming Community:** Many of the groups mentioned (Huilamocco, Yanamocco and Moro) are run by a traditional system, given that their organization structure and management is governed by active setups and is composed totally of the families constituted in the general meetings, whose president has maximum authority of the community. The president is selected and replaced every two years and the common meetings are held monthly during the year.
- **Irrigation Committees:** These are located in Añazani and Chancarani. The work as specialized committees in the administration and use of water. They follow the same organization principles as those of the farming communities, meaning that they count on selected representatives chosen by general members and meet once a month to evaluate and program activities.
- **Partial:** These refer to the groups of Huancarani, Copata and Moroquita. They are formed by groups of families that are not legally recognized as farming communities, but have an organization operating and management system similar to those of traditional farming communities.

<sup>9</sup> Republic of Peru. Decreto Supremo: 045.AG/95.

From this description of the social organizations in the working territory, the fact that the farming communities favour joint participation in management and execution of jobs is emphasized, and then proposes a relevant fact at the time of promoting the different development initiatives.

### **4.2.3. Productive Activities**

As previously mentioned, the economy of the working zone is sustained mainly by farming activity. Labor in this sector extends to 60% of the active population of the region.

In the farming systems, the level of the population who has availability in terms of production methods can be distinguished, which a classification of the three levels can be established. These being: high, medium, and low, in relation to the availability of land, capital, and technology. The systems include, along with a familiar subsystem, two productive sub-systems: agriculture and farming.

80% of the Agricultural subsystem is used for personal use. Its main alimentary cultivations are: potato, barley, bean, quinoa, holluco, oca and millet grass grain. As for pasture two main types are used: alfalfa and dactyl and clover and rye grass. This only makes up 10% of the total pasture. The majority of the systems have been considered as having a medium technology level: In some cases a tractor is used to sow plants. As for fertilizers, the employment of chemical products is limited to only the high level and minimal use in the medium level. The organic improvements occur anyway, these being the only contribution of nutrients to the soil in the low level. Also, cultivation rotation is carried out, establishing a rotation similar to the following chart:

**Image 4.2: Proposed Crop Rotation.**

Year 1	Year 2	Year 3	Year 4
Potato	Quinoa -Barley- Wheat	Bean	Oat or out forage

Source: RPHA Projeet

The farming subsystem is economically safer and is based on the main support of the income of the farming communities and therefore is not as directly orientated to personal use as in the case of the agricultural subsystem. The most important species is cattle for the production of milk, leather, and meat, ovine for wool and meat, and camelids for fiber and meat. 90% of the cattle raised by the family are Creole; however the producers in the high level raise cattle which are improved by the Brown Swiss race, which provides better production and milk. The rest of the cattle are used for self-sufficiency.

The few leftovers that are obtained from the farming subsystem are: Sweet potato, potato, beans, cheese, and live cattle. These are sold or exchanged for other species. The income generated from product sales are used for the purchase of goods and basic services for their own sustenance (other food, medication, materials and teaching materials etc). The scarce development of productive activities means a reduced capacity to generate income or job positions, which creates a problem with the elevated population increase, which is only reduced by a defined emigration, which means consumption of the rural generated resources but is not re-invested in the same area.

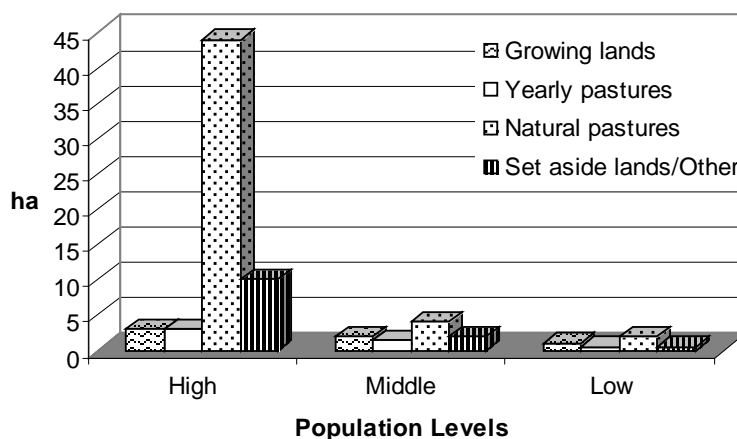
#### 4.2.4. Producers Typology

Information gathered from surveys in the Mañazo and Illpa areas reveal the existence of three types of producers, which have already been indicated in productive activities as high, medium, and low. To classify these, the following criteria will be used:

- Land ownership
- Cattle ownership: bovine, ovine and alpaca
- Certain activity technicality level: implementation of cultivated pasture on the farm and fertilization

In the following chart the uses of agricultural soil inside the area of Mañazo is shown. From the chart you can see the primary dominance of the use of natural forage, and also important differences in terms of population.

**Image 4.3: Land Use According to Population Levels in the Mañazo Area**



Source: RPHA Project

In the first place, the fact that the distribution of land is emphasized, which is the main factor that defines the **high level**, as a medium term possesses four times more land than the middle level. In the high level the percentage of land surface that is dedicated to cattle pasture is superior, while the percentage of the cultivated areas is higher as the level descends. This is motivated by the need of a minimum self consumption production for survival. It is observed that despite a relatively increasing percentage, the real value of the crop land size decreases, which makes it clear to the producers of the low level that they lack the necessary means for a production that guarantees an adequate diet.

Besides having access to the most amount of land, the surveys show that high level producers also produce the best quality. This allows them to own the greatest amount of cattle, which puts them in a better position for the production of a marketable surplus of products. The average surface area is  $62.5 \pm 30.6$  ha distributed in the following way: 85% crop, 78% natural and cultivated pastures and 14% rest areas. In terms of the cattle owned  $27 \pm 9$  bovine,  $98 \pm 66$  ovine and  $56 \pm 51$  alpaca. The greatest variations are in the alpaca population; therefore the possession of cattle is more frequent and consistent. It is supposed that the population in this level possess sufficient means to satisfy their basic needs and to generate a surplus.



The **middle level** includes the families that, in normal conditions possess sufficient means to satisfy their basic needs, but in unfavorable times they are faced with famine, and are forced to emigrate during bad harvests. An average of  $11 \pm 4$  ha is available and is distributed in the following way: 21% crops, 75% pasture and the remaining 13% for rest areas. The average farming inventory is made up of  $12 \pm 4$  bovines,  $25 \pm 22$  ovine and  $16 \pm 8$  alpacas.

The **low level** groups the farmers that own little land and those that suffer the severest droughts. The average land ownership is  $4 \pm 1$  ha of which 35% are used for crops, 60% for pasture and the remaining 5% for other uses. The average farm has  $6 \pm 4$  bovines and  $14 \pm 2$  ovine.

The productive structure in Illpa is more equal as there is less disparity in terms of ownership distribution. This is due to a system of continuous development by associative companies which share out an equal share of the land area to communities. The middle level has  $30 \pm 11$  ha available (22% crops, 75% pasture 3% other uses) and an average flock size of  $20 \pm 5$  bovine,  $37 \pm 21$  ovine and  $4 \pm 1$  alpaca. The low level possesses  $13 \pm 8$  ha (20% crops 67% pasture 13% other uses) and a flock of  $9 \pm 3$  bovine,  $16 \pm 10$  ovine and  $3 \pm 2$  alpacas. The distribution of the use of the soil in Illpa is represented in the following way.

#### **4.2.5. Basic Services**

The rural housing in the zone follows a very similar pattern. Almost 100% of housing is owned by the people, as a great number of the farmers are the owners of the land that they occupy. The main construction material is mud brick<sup>10</sup>, 70% of housing is made of this material. As for the roofing, corrugated iron or straw is used. The land area of the housing varies from 100 to 500 m<sup>2</sup> which 100 a 200 m<sup>2</sup> is used for construction. Houses have 1 to 3 bedrooms. This seems an apparently sufficient size but as in many cases, family sizes are numerous and for this amount of people living in this area, the living conditions are not sufficient.

In terms of supplies, the condition of housing is slightly better in the Mañazo zone, where 50% of housing has electricity and 90% possess their own water well on their land. In Illpa electricity is not available and the water supply is through tubular wells. Only 41% of the households have a toilet.

#### **4.3. General Characteristics**

The "Reduction of Poverty in the High Andes through Transformation and Commercialization of Farming Products" project is being developed in the high plateau of Puno, Peru, by the CIP, the International Natural Resources and Environment Investigation Centre, CIRNMA, a government organization and the National Farming Investigations Institute NFII-Puno. This is focused on the establishment of technological mechanisms that allow the optimization of technological products with a comparative advantage which can be produced in small productive amounts in the high plateau ecosystem.

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<sup>10</sup> Locally known as brickwork.

In a collaborative way, the activities are carried out in order to resolve the global problems of low production and profitability caused by climatic and technological factors, and by limitations of capital. This being a current priority to invigorate production systems and achieve an improvement of income and production.

The nature of the project is based together with the activities based in the selected areas of the high plateau: Mañazo, Illpa and Ilave. In these areas the following ideas are encouraged: the generation and development of farming technology, the rational use of biodiversity, the transformation, validation, and transfer of farming products, and the validation and transfer of low cost technology that has a high probability that it will positively affect productivity and income of farming systems, for both individual producers and farming companies<sup>11</sup>.

The different actors involved in the project form a strategic alliance of investigation and innovation in order to facilitate a common opinion from the different knowledge offered by the different levels<sup>12</sup>:

**Image 4.4: Institutional Actosr Involved in the Project.**



Source: RPHA Projet

- **International: CGIAR** which acts with the FAO, the UNDP, the UNEP and the World Bank. **CONDESAN**, Consortium for the Sustainable Development of Andean Eco-region; **INIA Spain**, National Institute of Investigation, Farming Technology and Food of the Ministry of Science and Technology, and one of the financers of the CGIAR. The **UIDRS** (Unit of Innovation in Sustainable Rural Development) from UPM, an organization which acts as an external evaluator in the project.
- **National (Lima, Peru): CIP**, one of the 16 CGIAR centers; which acts as the coordinator of the strategic alliance.
- **Regional: INREI**, International Natural Resources and Environment Investigation Centre, in the Puno region, that acts as a key point of contact with the people in the project; **INIA-Peru**, Experimental Station ILLPA-Puno, in the Peruvian high plateau region (3,850m) and in the region where a pilot plant is located in the project.
- **Local: Andean Communities** and producer Associations of the farming communities of Mañazo e Illpa, grouping more than 1000 families.

The specific objectives held in the project are linked to development of potential produce, biodiversity, land use restrictions, transformation of farming products, and training and technology transfer. These are described as:

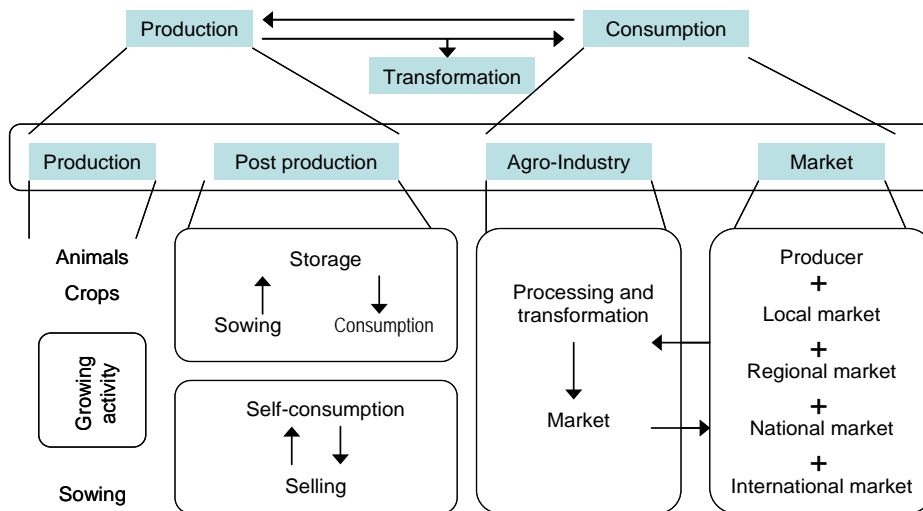
<sup>11</sup> The project's financial resources, from 2002 to 2005, total \$US 1,999,000, which was contributed by: INIA Spain (US\$900,000), CIP (US\$905,000) and NFII-Puno (US\$194,000).

<sup>12</sup> Other institutions and projects do exist that share the objectives of the project: Conservation Project Institute, Puno; Project INCOPA/CIP; PIWA-Andes; ONG, Puno; National University of Daniel Alcides Carrión, UNDAC, Oxapampa office and the Producers Association in Oxapampa (APYEDO).

- Identifying and establishing new income alternatives through production, transformation, and commercialization of Andean farming products with a comparative advantage and potential demand in local, regional, and international markets.
- Contribute to the conservation of biodiversity of Andean crops.
- Establish technical assistance mechanisms and financing for small businesses.
- Generate added value through the processing of farming products.
- Train people in small businesses and key people in the development in the high Andean zone.

The following chart describes the conceptual framework of the project. In the chart, the different elements considered at the objectives and actions planning stage are represented as well as the relationships that can be established between them.

**Image 4.5: Methodological Process of the Reduction of Poverty in the high Andes Through Production, Transformation, and Commercialization of Farming Products Project**



Source: CIP - CIRNMA

During the realization of the project, the execution of an intermediate evaluation was contemplated as a medium of increasing knowledge about the developed processes so that the lessons obtained by experience could be incorporated in an efficient way in the posterior execution of the evaluation. For this, the participation of experts from the **UIDRS Unit** of the Polytechnic University of Madrid (Spain) was counted on, and contributed an innovative evaluation method that, as you will see in the next part, contributed not only conclusions about the project but also experience in applying innovative planning models in development initiatives.

#### 4.4. Involved Actors

It will be made clear in the following paragraphs that the described project assumes a clear example of a planning case according to the model of social reform<sup>13</sup> in terms of

<sup>13</sup> This refers above all to the approach to reality like the processes implemented to give an answer to the detected necessities. As it has already been mentioned in the first part of this job, which are precisely the methodological focus on the elements that differentiates the planning models, for which a relation of authoritarian ranking between the actors must not be presupposed in the social reform model, although it is true that the experience shows that this has happened frequently in many places.

the approach to the problems in the zone. The current consideration of the groups and involved actors assumes an element of reflection necessary for classification. From projects, like the case considered in the previous chapter, three types of actors appear: the promoter, the planning team, and the affected people.

The **promoter** is the CIP as it is the organization that leads the project and makes the rest of the participating institutions join it, like the public Peruvian administrators, Universities and local and international investigation centres as well as private associations. The project proposes the formation of a **planning team** in which the participation of experts in different matters for each one of the areas of understood actions.

Finally the **involved people** are made up of the families of involved farmers in a direct or indirect way in the project. Within this, the target group of the farming families directly involved in the promoted activities is emphasized. Within this target group a differentiation can be established according to each one of the activities.

The definition of the **target population** is defined by the population's own initiative, in the measurement that the decision of participating in the projects uniquely corresponds to the farming families, but on a great measure is determined by technical conditions. For example, participation in the activities of semi-intensive fattening or in the improvement of pastures depends greatly on the dimensions and familiar operations, the economic calculations made in the formulation of the projects determined the requirement of minimum operation sizes that made the adopted transformations viable.

Another consideration in respect to the actors is that the value of the planning model followed which should be taken into account is the order of actions of these people. So in this case an approach to the reality of the farming families by the scientists and experts of the CIP, who determine an action strategy that is concreted into various areas in which experts from other public and private entities come in to the situation to collaborate with their capacities and action sectors. Next, the local people are the receiver of development proposals and finally common work is done for cooperation.

## **4.5. Developed Processes**

Two differentiated processes can be distinguished in the project:

- The formulation and implementation of the project.
- The project evaluation.

The design implementation and execution in these processes depends greatly on the consideration of the planning model as Social Reform for this study case.

### **4.5.1. Formulation and Implementation of the Project**

In terms of formulation and implementation of the project, the developed processes are concreted by each one of the activities described above.

#### **4.5.1.1. Production Development**

This area corresponds with the first described objectives and has a direct connection with the other areas, all of which contribute to increase farming potential or establish direct synergy with this, acting lines, all of these lines contribute to the increase of farming potential or establish synergy with this. This action focuses on the first of the project objectives through the specific objective: "Establishing potential demand and product type demanded in the local and international markets", for which two operative objectives are presented, these being:

Alleviate the negative effect of migration through the promotion of new farming resources that generate alternative income and contribute to the reduction of poverty.  
Study the economic feasibility of the development of Andean farming products

Both of these are related with the generation of technology, its transfer and adoption into the situation, which permits the increase of production and income, which then permits the farming family to stay and invest in the rural community and contribute to the development. However, this is impossible if there is no access to the local, regional, or international market that could be potential consumers of the products produced in the high plateau. To have that access, it is also necessary that the production in the high plateau can develop competitive advantage which allows it to position itself in the market. About this, studies orientated towards evaluating the effect of technology and migration have been developed, so that the development of low cost technology is able to be implemented in the high plateau.

Two major productive components have been identified here, agriculture and livestock. Within these groups, studies have been made identifying the following specific productions: Potato, trout, quinoa, alpaca wool, yacón, lamb and alpaca meat, ilk and beef

The production of **bitter and sweet potato** was split up into a compilation of the variety of crops in the zone so that thereafter an evaluation could be carried out to discover its production capabilities. This involved field tests which served as evaluation methods and demonstration cases at the same time.

In the mentioned tests, the crop development was evaluated from different crop rotations and fertilization conditions. The execution of these tests was carried out by the monitoring of the crop land of the farmers who collaborated with the tests. The result of these tests was converted into a series of recommendations that are being transmitted to the group in order to move their productions to more favorable conditions.

As for the production of Yacón, the activity was centered on establishing potential demand and the type of product demanded by the markets. Production classification criteria were created which determines the final destination of the production by direct commercialization or processed. This classification is carried out by APYEDO based on previous experience.

The initial phase of the project showed the necessity of undertaking the following acts:

- Complement the market studies of the selected products.
- Development of the studies of migration phenomenon and its relation with the future demands of farming producers.

- Evaluate the farming and agricultural development based on alternative technology.
- Develop the production and transformation of yacón in the jungle zone of Puno.

#### **4.5.1.2. Biodiversity**

Local farmers currently recognize the **genetic variety** by a traditional inherited designation that not only reflects morphology of tubers and plants, but also its use in the customs of the Andean culture. This means that the preservation of biodiversity is important to guide the conservation of biological inheritance and also provide a defense for cultural inheritance which involves an added value in the Andean region. Among the main contributions of this diversity, the following can be added:

- It allows improvement in diet by mixing flavors, textures and colors.
- It assures survival and storage in case of damage or sickness.
- Specific cultivation has been developed for consumptions in soups (dried potato (chuño), moraya, huatia) or in ceremonies.

A **collection** of the variety of the most cultivated potatoes in the region were split up and classified according to traditional criteria. Local knowledge was respected in the classification of crops and genotype was based on DNA patterns obtained by molecular techniques.

It was shown that the number of real varieties was inferior to the amount that the people thought, as many of these varieties presented the same genetic makeup treated in the practice of the same variety.

Finally, a production program has been started for virus free varieties with the purpose of introducing them into the crops on a grand scale by the local people. For this, the method usually used in the CIP was followed; consistent with submitting In-vitro seeds to a process that combines thermotherapy and cultivation of crops (Pata and Golmizaie, 1997).

The initial phase of the project showed the necessity of undertaking the following acts:

- Amplify the analysis of the genetic diversity by integrating more farming information with genetic-molecular information, and amplifying the number of studied varieties.
- Amplify the methodology of the study of the variety of potato to other local crops.
- Intensify the production of potato varieties and virus free oca.
- Introduce virus free varieties to the farming communities on a grand scale.

#### **4.5.1.3. Land Use Restrictions**

This act aims to mobilize the different structural resources in the region to the greatest extend. This means, its aims to provide incentives and support so that productive land is actually used for production, it has been observed on many occasions that the lack of material resources, and for economic reasons, equipment prevents that the desired production levels are reached.



The works were centered on the formation of alternative productions for each one of the proposed activities (Semi-intensive fattening of bovine livestock, improvement in forage base, milk production and lactose transformation, genetic management of reproducing ovine, reproduction control and reduction of climatic risk). For each proposed activity a budget and execution plan were formulated which served as a base for calculation and the concession of micro-credits.

The proposed production programs were conveyed in formation seminars and have been subject to monitoring in the field as a mean of assistance to the producers. The example below shows the production program for the fattening of livestock:

- Purchase of animals with an average value of 750 soles in the livestock market or owners that sell their livestock.
- Medication doses against gastrointestinal and pulmonary parasites.
- Implantation of hormones.
- Measurement of initial weight and register of the information of the animal.
- Acclimatize animals to the new type of feed during a period of 15 days.
- Fattening period is concluded when the weight increase does not exceed the margin of the costs of feeding the animals.
- It is estimated that the weight of livestock is 1.7 to 1.5 kg, and in 90 days it will have an increase of 135 to 153 kg by fattening the animal.

The main inconvenience of this activity lies in the commercialization process, as work is done with small producers; the markets tend to be controlled by the buyers. However the economic evaluation in the next chart shows that this is actually a beneficial activity. Besides this, it is hoped that as the activity is generated more, the positions of the producers will be reinforced in the region and the perceived margins could be greater. Finally, a fattening cycle of 90 days is proposed and two cycles can be made a year during the warm months.

As a matter of assistance for the development of livestock production, the creation of a service which improves the genetics of ovine livestock is also emphasized, for which a herd of young reproductive lambs in the experimental station of INIA-IIIpa is counted on. This deals with Hampshire Down sheep, which have been selected with the intention of improving the production of Creole race wool, which is the majority type. From this, a supply of reproducing males is created to cross with reproducing sheep financed by a micro-credit. The mentioned loan is made available for the producers who have a minimum flock size of 25, which is considered as the minimum size to justify the adoption of reproduction.

#### ***4.5.1.4. Local Transformation of Farming Products***

The processes developed inside the farming products transformation activity depends on the different production activities undertaken.

In the first place, for the development of **new products derived from meat**, a development theory was made in which the project's technical team formulated some hypothesis for the creation of new products like the combination of alpaca meat and lamb, for the elaboration of the previously mentioned products: sausage, smoked beef, English ham and Frankfurter sausages. This deals with an essentially investigative

activity in which the acceptance of consumers of the newly developed products is being valued. For this, experimental processing of meat products which have been submitted to tasting has been carried out. This activity intends to detect which derived alpaca and lamb meat is more suitable to develop into a production of innovative articles that reassess the producers' meat resources and widen the possibility of possible commercialization of the meat in the market, making it bigger than the production of wool and fiber.

The support activities for the **manufacturing of cheese** and the derived dairy products are centralized by the creation of an experimental station from which formation and technical assistance is given to. Alongside this, an evaluation of the cheese industry in the zone looking at the developed products and processes was made and the following information was found:

- Various associative companies and individuals exist that produce a volume of milk that varies between 20 liters daily (the smallest company) and 110 liters daily (the biggest company)
- It deals with not so efficient companies with elevated milk consumption by kilo from produced dry material.
- There is a lack of necessary sanitary measures in order to achieve a safe commercialization of its production.
- The majority of production is of paria cheese, which is the most common in the zone, and no other type of derived dairy products are produced even though a local demand for these products exists.

A proposal was made for these points for a cheese department in which the equipment and the necessary processes to obtain a quality product that would increase its added value and facilitate its commercialization would be counted on. Two reliable companies were contacted to take on modernization under micro-credits: an associative Company and an individual woman producer. The members of these two cheese producers were the main receivers of training events that focused on:

- Distribution from the cheese factory and health and hygiene rules,
- cheese manufacturing techniques to increase the efficiency of the processes.
- types of cheese and derived dairy products with the purpose of diversifying the product further than the traditional paria cheese.

The CIRNMA-INIA experimental station has been the fundamental element in promoting all the transformation in this sector, and also to increase the milk production in the zone resulting in a new buyer of milk from the farmers.

The **transformation of yacón** is being carried out through the coordination of APYEDO, and the whole process has been centred on the selection of the production and the entire process has been centred on the selection of the production in terms of its quality, which determines if it is suitable for direct consumption or transformation for the extraction of yacón honey in a pilot plant installed as an initiative of the CIP in Oxapampa.

Finally, the actions in the processes of **transformation of potato** were centered on the knowledge of local technology and the identification of the most efficient communities in the execution of the processes. They came to the conclusion that the tunta made in Chijichaya and Santa María had the least quality, for which the action set out to give diffusion to the process of these communities with the purpose of

improving global production in the region through the communication of people's experience.

The processing of tunta turns out to be profitable and is a suitable product for commercialization, which is not the case for dehydrated potato, which in all the studies made presents a cost to benefit ratio of 0.94 to 0.78. However, this deals with a product that is still being manufactured and is the basis of food for the families for which lower quality potatoes are used (small caliber or damaged) that can not be used in the manufacturing of commercial tunta.

#### **4.5.1.5. Training and Technology Transfer**

This activity includes business management and management methodology courses so that an efficient commercialization of Andean products can be achieved. It includes publications, practice, and technical personnel training in Peru and Spain for the subsequent formation of the farmers. Training is an important component in the development of the projects which involves three phases developed consecutively:

- **Training of technical personnel:** In this phase various technicians from CIRNMA and INIA-Puno, acquired knowledge in the manufacturing of transformed meat products which could then be passed onto the farmers. Also, the personnel who would be in charge of the management of the cheese production pilot plant was selected. These technicians were in charge of providing this information to the local producers.
- **Training of producers:** This is focused on three concrete aspects: 1) the analysis of the organization of the project and the consideration of the advantages and disadvantages. 2) Information about technology and acquisition of necessary knowledge for the transformation of farming products (meat, milk, roots and tubers). 3) Management of crops (potato and livestock pastures). The chart II-22 summarizes the information about the developed processes, in which a total of 527 producers participated in, of which 28% were woman<sup>14</sup>.
- **Complementary training:** This is carried out through investigation jobs developed by farming technology students in topics related to the project.

#### **4.5.2. Participative Evaluation**

The evaluation of the project took place in the year 2003 and was carried out by the **UIDRS** from the Department of Rural Projects and Planning of the Polytechnic University of Madrid.

The institutions of international cooperation have the responsibility of making judgment about the value of efficiency of the public interventions that they finance, with reference to the explained criteria and with plural-disciplinary focuses that involve

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<sup>14</sup> Taken from the results of participative evaluation, women are a priority agent for the promotion of innovations in the rural environment, becoming the group of people with the most abilities in the management of information technology as is the case of the Internet.

all of the involved actors. Trying to apply a transparent and efficient politic the INIA incorporates an external evaluation component into the project.

Since 1979, when the first works began with an economic dimension, (Scobie, 1979), the necessity of evaluation models has become greatly important inside the system CGIAR (CIMMYT, 1992; CIAT, CIMMYT, CIP, 1992; CIAT, 1990; Lee, Kearl, Uphoff, 1991; Collinson, 1968, 1994; Anderson, Herdt, 1990; Hardie, 1988; Wilson, 1989).

In the experience that the **general objective** of the evaluation of special works presents is to provide a value judgment of the consequences of the project in terms of the relief of poverty, human development, and the protection of the environment in the high Andean region through the transformation of farming products that stem from farming agriculture and the sustainable use of local biodiversity.

The **specific objectives** of the evaluation are to determine the results of the impact of the project by the following **5 priority ideas** of the project: 1<sup>st</sup>. Development of production potential; 2<sup>nd</sup> Biodiversity focused on contributing to the conservation of Andean crops; 3<sup>o</sup> the "restrictions in land use and; 4<sup>th</sup> the "transformation of farming products" and, 5<sup>th</sup> the "training and technology transfer".

We also have to add to these objectives: To get the "agents" of the project to improve their relationships in order to work better, following the previous priority ideas and the global objectives of CGIAR (Winkelmann, 1998).

The next image shows the basic developed work scheme with a focus on social learning, in which so many external evaluators from the UIDRS intervene, like the technical teams and investigators of the CIP and of the support Institutions (CIRNMA, INIA-Puno). Starting with some reference terms of the INIA-Spain and the general orientation of the CGIAR, some reasons for dialogue and cooperation are established, opening it up to a joint working process that includes, above all, the affected population. This deals with an evaluation that has a **pluralistic focus** on all the actors that are involved in the project.

About credible and publicly accepted information, the value judgments of the evaluation are formed through the **participative processes** generated between the speaker and the concerned groups of the project. With this evaluative focus– Participative Evaluation– a better quality and transparency of democratic debates has been achieved, through a knowledge and understanding of the logic and effects of the investigations by justifying the impacts and resulting judgments. This evaluation focus consists of producing a "judgment about the investigation values for human development" making all the involved people participants in this action.

The model puts its scientific roots into the tradition of planning as Social Learning and suggests new values for pluralistic and social planning (Friedmann, 1986, 1993, 2003), whose main action must be orientated towards trying to help the people develop by themselves (Cazorla, Friedmann, 1995; Alier, Cazorla, De los Ríos, 2001; Quintana, et al., 1999). This way the focus given to the evaluation assumes an innovation inside of the general project planning model that is adjusted to the classic social reform. Therefore this evaluation assumes an element for the learning of the managers of the project about innovative procedures within the rural development initiatives. This also involves a level of learning by the affected people, which stop being a receptor of



**Image 4.4: Working Scheme of Evaluation as Social Learning:**

INFORMATION	PRIMARY	Producers: of the local communities: direct beneficiaries of the Andean communities Mañazo, Moro, Illpa. Important actors: Politicians of the Central Government (Ministry of Agriculture in Puno), Regional and Local (Mayors), Managers of CITE-Alpaca. Investigators: CIP, CIRNMA, INIA-Puno, ILLPA, Agraria University, CONDESAN investigators, Investigators of INIA-Spain. Managers: a series of interviews will be made with the managers and with the members of the CIP and INIA-Spain which contribute to the institutional coordination of the project.
	SECONDARY	Information taken from the monitoring system generated by the institutions, proportional to the investigations, previous evaluations.
LEARNING	DIRECT	The users and the people learn directly from the successes and failures of the interventions
	INDIRECT	The agents affected realize that they must question certain basic assumptions in relation to the theory of the actions. This can include for example, reorganizing the implementation of the less successful interventions
KNOWLEDGE	ENDOGENOUS	Local teams with endogenous knowledge of the region, knowledge of social agents, rural communities and institutions in the territory. Information about experience, investigations and current projects.
	EXOGENOUS	External UIDRS teams contribute scientific methodologies, visions and external knowledge, experience of other regions in Europe contrasting of local methodologies. New forms of collaboration and international and inter-territorial cooperation, new agents, new synergies. Interchange of experience that contributes to a better capacity to mobilize the endogenous resources, enliven the agents and plan development. Opening of the territories.

Source: (UIDRS, 2003)

For its importance in the process, the information of the field work with the producers and the families in the project are summarized in the following table (UIDRS, 2003).

**Image 4.5: Summary of the Surveys Made to the Farming Communities During the Evaluation.**

	FARMING COMMUNITIES	
	Mañazo	Illpa
Population of the district	5,748 people	4.605 people
Nº local communities	7 farming communities	2 farming communities
Nº families in the area	331 families	290 families
Target population	1.986 people	1.740 people
% of the district population	34.6% of the population	37.8% of the population
Families interviewed	18 families (108 people)	18 families (108 people)
Population directly interviewed	5.4% of the target population	6.2% of the target population
Population indirectly interviewed 15	407 people 20% of the target population	214 people 12% of the target population

Source: Own source.

<sup>15</sup> Many of the people interviewed (4 en Illpa and 8 en Mañazo) had some position in the community representing different members of the Producers Associations, which assumes that by an indirect manner more people have been reached.



## **4.6. Planning Practice**

The planning practice is presented as an example of planning inside of the Social Reform model. Following this part, its four central characteristics will be studied, in accordance with what is described in the first part of the book. These are:

- Planning from the top
- Planning is perceived as a scientific activity
- Reorientation of political interests
- The affected actors do not manage decision making

The project under study presents the particularity that being an integral action project in the farming section of all of one region implies numerous action environments, that on occasions are not interrelated and in which very different activities are made. There for example determining genetic diversity maintains a scarce relationship with the support for transformation and commercialization of milk, and while the first mentioned activity is eminently analytic, the second is directed to promote farming producers' participation.

But on top of these internal differences, the projects presents a good coherency based on an internal acting logic which determines if it serves as an example for the second model Description of planning as Social Reform.

### **4.6.1. Planning from the Top**

As the third chapter illustrates, planning as Social Reform requires a hierarchical structure put at the planners disposal, as means to put its guidelines into practice. This place the planners on an apparent superior level in respect to the affected people. In the pure social reform model this inequality comes from the technical reason, expert knowledge and experience of the planners.

Just like in the description of the project and in the description of the developed processes, a clearly descending operative process is made clear in which the knowledge of the expert formulators of the projects and arrives to the farmers through processes implemented by those. The followed progress can be arranged in the following steps:

- The necessity of the farming communities that mobilize actions of the experts is identified.
- These develop an acting procedure using the previously available knowledge.
- An acting proposal is formulated for the local people.
- The implementation of the activities is in the hand of the participating farmers, but the planning team must previously decide the start of the mentioned activity.

It is made clear as in this case, the farming communities are receptors of concrete development proposals made by the planners (top-down approach), but they do not participate in decision making that have triggered a concrete proposal (bottom-up approach)<sup>16</sup>.

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<sup>16</sup> In any case the farmers maintain the liberty to receive proposals and actively participate in the actions in which they are receptors in. If this liberty is not respected then a deep rupture will be produced and impose dictatorial regimes.

#### **4.6.2. Planning as a Scientific Activity**

The second Social Reform characteristics makes a reference to the concept of planning as a scientific activity, in this case, and the same that happened previously described concentration of plots, the main objective is to arrange a final optimum situation in which the life of the affected people is improved. While the previous case described an action eminently structural that is centralized on the redistribution of the Ownership of land, in the case of the project developed in the Puno area, these actions have been centered on productive activities.

The measures are programmed and executed in agreement with the previous studies. In the micro credits case, the producers must comply with certain minimal conditions of their manufacturing and herds in order to access them. The mentioned conditions have been established by the planners of the formulation phase of the project. They may be subject to modification but always according to the criteria of the planning team managers.

#### **4.6.3. Reorientation of Political Interests**

In this case the Word political should be understood in a broad sense that includes the social interrelations. In this sense the project aims to modify these relations through guiding the farming products towards more favorable conditions. In this case a top-down approach is followed in which the results of experience investigation and previous training are transferred, mainly through formation, in which the population's participation is initially passive.

As the project advances, the relationship between the planners and the affected population becomes more collaborative, as the monitoring and field assistance for the implemented innovative activities are focused on by the farmers.

The project aims to modify the intimate interests of the farmers and their farming production, the implementation of innovations that assume the modification of traditional practices are pursued in order to carry out other novelty innovations. The mentioned level of novelty is variable. As in the case of the manufacturing of tunta what happens is diffusion is given to the more precise transformation processes, but the replacement of these is done within the idiosyncrasy of the local culture.

The reorientation of political interests is very evident in the experimental plants of milk and yacón transformation, which assume a demonstrative element of how they should be considered positive and assume a demonstrative element of how it is considered positive that they are the new developed processes for the producers.

#### **4.6.4. The Affected People do not Participate in Decision-Making**

By looking at the described experiences, and seeing what happens in the case of the previous chapter, this affirmation must be made fairly, it can not be affirmed that the affected people do not participate in the decision process, in such a positive way as the theory description made in the Social Reform model. The participation of the people is evident as the farmers are the only responsible actors for putting the proposed

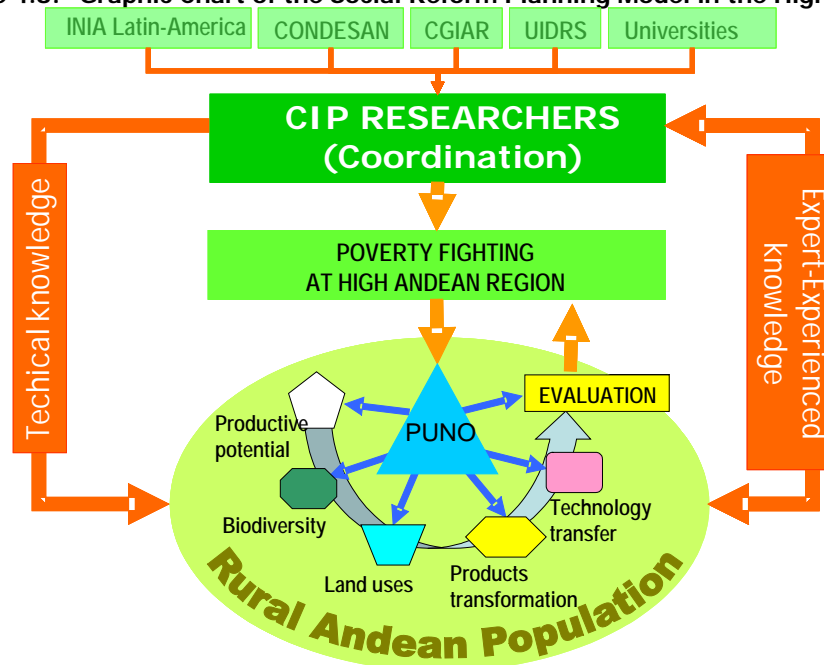
development initiatives into practice. However the participation of the farmers in the planning and the selection of initiatives to be applied is scarce or does not exist.

In this case a fundamental characteristic of the Social Reform model is complied with, this being the selection of alternatives and the design of the acts essentially corresponding to the planners, which, based on their knowledge, carry out a planning process from an action plan to get to completely formulated projects that are presented to the people (the target groups) for their approval.

#### 4.6.5. Graphic Chart of the Case Model

The following chart shows the graphic representation of the Social Reform model adapted for the study case of the “Fight against poverty in the high Andes through production, transformation, and commercialization of farming products” project.

**Image 4.8: Graphic Chart of the Social Reform Planning Model in the High Andes.**



Source: Own elaboration.

In this, the plural-disciplinary composition of the planning team is appreciated in the first place, which is coordinated by the experts of the, but counts on the participation of numerous organizations and relevant institutions in the Andean farming sector. From the work, this group brings up the project and puts it into practice with a growing focus, first through practice projects and demonstrations and then will a gradual involvement of the affected people. For this, the chart that represents the Puno region is triangular, and indicates that the implementation into the society of Puno is growing and in many cases follows the pyramid structure from the local leaders to the rest of the people.

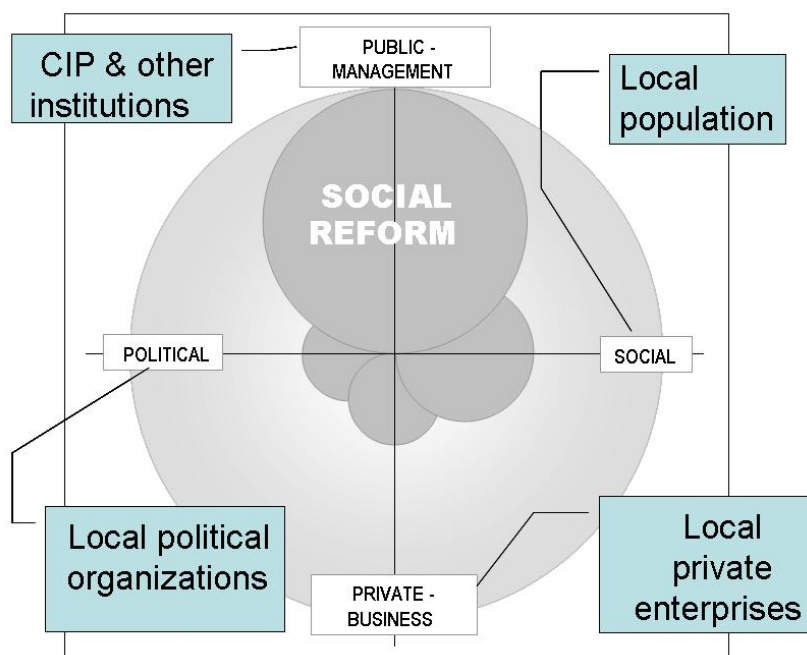
The project is made definite in different action areas that are represented by the different projects. These, despite presenting synergy, are established as independent areas. In a transversal way, the action of the project evaluation appears in all of them, which provides returning information from the Puno region to the planning team.

The fundamental support of the approach of the planning team to the region is technical, meaning, the scientific knowledge and previously derived techniques from the experience of the planners, but also contributes the particularity of incorporating local knowledge into some actions, as is the case of the transformation of potato, in which it is not aimed to modify the local knowledge but to upgrade it from the compared study.

#### 4.6.5. Case Planning Domain

By representing the Planning domains, this wants to make a reference to the relative importance of the different actors in the society involved in the projects in terms of the resulting planning to the supremacy of the roles assumed by each one of them.

**Image 4.9: Planning Domain of the Fight Against Poverty in the High Andes Project.**



Source: Own elaboration.

Therefore the main role is assumed by the organization responsible for the starting of the project, the CIP. It is represented within the public administrative environment, understanding the public environment in a broad sense. The CIP and the cooperating organization assume the public role of formulating and managing the development project, and also carry out administration work of the project inside of the mentioned public environment, which is not the broad spectrum of human relations within society.

In the second place of meaning the local people meaning can be established from a double scope: In the first place the scope of the problem it suffers, which is not only the poverty situation, and in second place the actions of the planners is directed to involve it in the tasks of the fight to improve living conditions and get out of poverty.

Finally, it is made clear that the private organizations and local politicians have little relevance in terms of process planning and are mere receivers of the developed planning.

#### **4.7. General Conclusions**

The executed evaluation model has allowed us to make a more complete analysis of the current and previous situations, adapting the future measures of the **Investigation and Participative Development in the Peruvian high plateau Project (Puno)** on top of a firmer base of the people affected and the agents involved. The results show how simultaneously running investigation projects with evaluation methodologies based on social learning allow the improvement of quality in terms of innovations, and the transparency of the use of public funds generates synergy that contributes to a better knowledge and understanding of the project's effects. At the same time a greater trust is generated towards the donating countries.

Some of the detected aspects from the application of the model are commented on below, which can contribute new innovations and learning systems inside of the four main dimensions that impact the sustainable human development:

##### **a.) From the point of view of transformation and diversification of the rural economy**

- The pilot plants financed by INIA-Spain, and located in the experimental station of INIA-Ilipa and the CIRNMA, act as key actors so that the investigations carried out in the CIP and the INIA have a direct application for the producers and the families, especially in the transformation and commercialization of local products.
- The cheese processing pilot plant, together with the INIA-Puno, is serving to give training to producers for the manufacturing of cheese and other lactose products, which allows the producers to generate a greater added value.
- The potential productive development is linked to the development of production systems in which roots and tubers play a big part. The large biodiversity of the Andean crops -potato, "yacón", "oca", quinoa and kañihua- and the animals – alpacas, bovine and ovine – are the main potential products of the families.
- The evaluation has allowed the adjustment of some of the Project activities, generates new alternative products and transformation of new products with a comparative advantage for the feeding of the people.
- Handicraft has been defined as a basic component for the diversification of the rural economy and the fight against poverty, especially for women. 90% of the producers interviewed considered this activity as a potential alternative to improve their income.
- The credit lines granted to the producers with Project funds through a credit rule made by INIA-Puno, CIRNMA and CIP are allowing them to finance with a progressive form the target population producers, although 68% of producers consider the type of interest as high.

##### **b.) From the point of view of the international relationships and globalization.**

- Many of the institutions in the territory are not accustomed to working together and do not know the international system of the CGIAR. Involving new international relations – incorporating the private sector, investigative groups and regional and local governments – will intensify the efficiency of development cooperation.

- The involvement of the Regional Government of Puno in the Project activities will assume an added value when faced with the future sustainability and viability of the actions
- The international relations and interchanges that are being carried out as a consequence of the application of the model and of the joint works, are contributing to a culture of evaluation and a collective conscience that can increase voluntary participation and creates democratic methods between the governments faced with the process of decentralization from experience from Europe.

**c.) From the point of view of education and knowledge base.**

- Formation is the base for a sustainable human development. The interest of priority objective of increasing education and formation training in all aspects, especially for artisanal women has been made clear.
- Currently, training and technology transfer is orientated towards training technical personnel, small business people and producers in the high Andean zone. The professionals of CIRNMA, PeruConsult and INIA-Puno have received training about technology and engineering for the manufacturing of meat and lactose products, with additional training in Spain.
- A total of 527 producers that are located in diverse communities in the environment of the Project have participated in different training events, with the participation of 28% of woman, who are related especially to the transformation of products. 71% of the producers interviewed are very satisfied with the training received.
- As complementary training, investigator teams with jobs applied to the reality of the high plateau are being formed. Currently two farming technology students from the Agraria University are carrying out their theories in aspects related to the processing of meat in the high plateau.
- As a consequence of the evaluation tasks as social learning, new agents and interested institutions have been detected, that have been involved in the project's activities and that can contribute a new base of exogenous knowledge.
- The contribution from the Telephonic Foundation to the development of Peru can influence the education levels of the producers and the families. The information technology for the service of the learning processes of the artisanal women of Puno will be able to favor the development of the economic activities, communications and the equality of opportunities.
- The future Pilot Tele-education Center in the CIRNMA is defined as a project component – educative room designed and equipped by the Telephonic Foundation – that is managed by the local community. This technical training benefits the families of the indigenous communities of the project and the habitants of Puno.
- Possibility of creating a “formation network link” through which the community leaders of Puno will receive training, as well as the technician-monitors of CIRNMA, that later will guide the producers and beneficiaries of the project activities.
- The websites already created by the involved institutions – CIP, Telephonic Foundation, UPM, INIA- will be able to facilitate the educative use of the Internet in the high plateau. These sites are being developed with the contribution of different public and private institutions with an international identity and involved in the formation environment for the development. The CampusRed experiences of the Telephonic Foundation or the experiences of



the cabinet of the UPM Tele-education will be able to incorporate its websites to create a virtual academic community of the project activities between universities, students, teachers, investigators and producers in agreement with the necessities of each community.

- Currently, between the artisanal women, an "informatic culture" has been detected, and they possess knowledge of email. The majority of the leaders goes to Internet cafes in Puno and makes use of this technology.
- One of the most important contributions of the collaboration with Telefonica is the possibility of making Internet as a tool for education, above all exterior commercialization of the products.

#### **d.) From the point of view of the new scientific developments and the diffusion of new technology**

A relevant fact of the process evaluation is that they suggested new observations about the possible actions to be included within the project, as in the case of the consideration of new technology. This observation couldn't have been carried out without the employment of process participation. The most notable observations made in this sense were:

- After meetings with the members of the Telephonic Foundation of Peru and CIP and CIRNMA investigators, the bases of a new strategic Alliance have been formed in relation to information technology and communications (TIC); especially for the creation of a formation Centre and training with the Internet orientated towards artisanal women of the communities.
- This experience of the Telephonic Foundation, in the framework of its commitment with the development of Peru, will have important direct and indirect applications for production, transformation, and commercialization of the farming products in Puno.
- The Telephonic Foundation, in partnership with INIA-Spain, will confirm the contribution to the Puno Project of its knowledge and experience in the following aspects: design of the formation Center (installations and necessary equipment in the CIRNMA), technical recommendations by the personnel of the Telephonic Foundation; experience in the management of education classrooms by the community; contribution of e-learning contents and existing websites; experience of other educative websites under construction, collaboration with the formation of artisanal women, recommendations for connections to the Internet, studying the possibility of optimizing the cost of its rates.
- The systems for decision making with the use of new technology, the virtual models and the tools that are developed in the CIP are other innovations with possibilities of application in the project.

### **4.8. Experiences Obtained in the Planning Domain**

**Social Reform** in its action pattern is presented as an answer process to a necessity observed in society, which in the first proposed case was the deficient structure of land ownership, and in the second case, the poverty situation of the farming population in the Andes region. Faced with this necessity, the Social Reform **proposes a resolute operative channel** that pursues the optimization of the employed resources. For this,

a specialized technical team is called upon that is responsible for the optimization through the design of the new operation structure. In the initial case, this operative channel was justified with the fear of change amongst the land owners, that a rich society is a very difficult productive factor to mobilize, for which an authority image was called upon. But in the case of the fight against poverty, the inequality factor can assume a limitation, as the main method for overcoming poverty must be the mobilization of human resources, which is the only productive factor that the poor societies possess. Therefore, in this case the social reform model contains a limitation because it makes the local people depend on the planners.

**Social Reform**, in the current context of change, presents a lack of funds in the environment of the **development projects**; the involvement of the population is slow and is carried out only in the final part. The difference of focus adopted in the evaluation phase, where a participative methodology was used, made clear that a participation capacity in the local population much bigger than that in the first phases of the project exist.

Social reform, to be efficient as a method of population development, must be inspired by a **deep service ideal**. Human qualities and planning personnel are fundamental as they must act with honesty with the needs of the affected people and with a profound sense of service towards them. In the study case a great level of these principles were complied with, which are the reasons that the investigation centers are dedicated to the fight against poverty. In the evaluation a great level of satisfaction from the local population in respect to the development initiatives received was achieved.