
ANNEX 34 ETHNOGRAPHIC STUDY HUMAN GROUPS IN AREA OF INFLUENCE

1 INTRODUCTION

This ethnographic study was made to complement the Human Environment Baseline of the Environmental Impact Study for the Alto Maipo hydroelectric project of GENER, which is projected in the commune of San José de Maipo, Metropolitan Region.

Ethnography gives an account of a way of acting in field research and a final research product. Ethnography is considered a descriptive theory; in fact the word “ethnography” comes from the Greek- *ethnos* – “tribe, people” and *grapho* – “I write,” so literally it means “description of peoples.” It is a research methodology involving qualitative methods of cultural anthropology, which includes data collection in the field, using members of the community as informants. The compiled information corresponds to a detailed description of the customs, beliefs, myths, genealogy, history, and economic activities, etc., obtained mainly from in-depth interviews with members of the community or with key informers about them.

The results of this study are presented in two parts: the first part is an analysis of human groups with regard to the variables of traditionalism-modernism, and the second part is an analysis of human groups with regard to the practice of livestock-farming.

2 METHODOLOGY

The methodology used in collecting data falls within the qualitative lines of social research. The procedures and techniques that were used to collect information were participating observation and open interviews, both semi-structured and in-depth. The techniques to control the information that made it possible to generalize the data were the application of interviews to different key informers about the same topic. Members of the most representative families of the different groups in the study were selected for the interviews, and the information obtained was compared.

Techniques derived from the genealogical method were also used for the ethnographic study to obtain information about kinship structures and their relationship to property and associative and collective work. The information was recorded in taped interviews, notes in a field notebook, and photographs. The following key informers were interviewed.

**Table 2.1
Key Informers**

| Place of origin | Interviewee |
|------------------------|--|
| El Alfalfal | Luisa Ibarra, Pedro Ortega, Mercedes Ortega, Emilio Martínez, Manuel Ibarra, Walter Saavedra |
| Los Maitenes | Pedro Quezada, Marco Aguirre, Alicia Suárez, Gerardo Ortega, Carlos Arenas |
| El Manzano | Pedro Muñoz, Waleska Muñoz, Fidel Ortega |
| El Canelo | Luis Vergara, Ramón Urtubia, Clemencia Urtubia |
| Baños Morales | Fernando Venegas, Israel Ibacache, Luis Núñez |
| El Volcán | Eduardo Arenas, Juan Carlos Cisternas, Francisco Rojo, Flor Coronado |
| El Romeral | Luis Guzmán |
| Yeso River Road | Elizabeth Contreras, Juan Tobar |
| San Gabriel | Margarita. Boarding school teacher |

There were also other local informers, but they preferred to remain anonymous. The information they provided, however, is also part of the content developed in the report.

The analysis was made under the perspective of the “Guide of criteria to evaluate the significant alteration in life systems and customs of human groups in projects or activities that enter the Environmental Impact Assessment System.” Regarding the definition of human groups, different human groups were identified in El Canelo, El Alfalfal, Los Maitenes, El Manzano, San Gabriel, and Baños Morales that coexist under the territorial context of the same locality, and in other cases human groups that inhabit different localities tend to blend together as do their common ways of life and customs.

Among the human groups analyzed, special attention was paid to their economic activity related to raising livestock and their use of the territory based on the needs of that activity. In order to facilitate comprehension of the research results, a Figure was designed that identifies trails and grazing areas. This was achieved with the collaboration of several key informers, all naturally dedicated to raising livestock. Figure 1 of this Annex shows the trails and grazing areas identified in the area of influence of the project.

3 DEVELOPMENT

3.1 RESULTS

3.1.1 Analysis of Human Groups Regarding Variables of Traditionalism- Modernism

Different human groups are distinguished in the area of influence of the project that is settled in the different localities. In general, these groups can be separated into two major sectors: the ones who come from traditional communities and the ones that have settled on rural recreational properties or been attracted by the ecotourism industry in recent decades.

There are different ways of seeing the environment and appreciating it, according to the composition of these groups, and there are also marked differences regarding their cultural characteristics, social and economic relations, relationship structures, beliefs, values, and attitudes that make up, as a whole, the concept of cultural identity.

On the other hand, this socio-cultural reality is dynamic, and it has been subject to constant transformation. Cultural change based on the variables of rurality-urbanity or traditionalism-modernism is part of a process that started many years ago so it is not possible to place the situation of these communities on a continuum that goes from rural to urban. What is really seen is the coexistence of these two forms of social organization of communities, motivated partly by the proximity to Santiago and the development of communications. All of the traditional families interviewed have relatives in the city, which produces an intense exchange of information and the adoption of elements that might be considered part of modernity, without ignoring the conservation of traditional features in both cultural composition and forms of socio-economic organization.

Regarding feelings of belonging and having roots, there is also a certain gradation of its intensity, according to the different periods when the territory was occupied. It is clear that the traditional families feel a different form of attachment and belonging to the territory, because they have experienced their entire socialization and endoculturation processes there. This does not mean that new residents do not feel any kind of attachment, but this feeling of belonging is not found in the deepest, unconscious part of the individuals but on the surface, and it can be perfectly rationalized and verbalized. On the other hand, it is impossible for individuals who belong to traditional communities to express this feeling in words.

One example, among many, of this different perception and evaluation of the environment lies in the linguistic difference between *buitre* (vulture) and *cóndor* (condor). Traditional residents use the word *buitre* to refer to the bird, which is a word full of negative connotations since that bird is a despicable animal to them, a scavenger that eats young animals and threatens their livestock. On the other hand, to new residents the same bird is called a *condor*, an emblematic bird that is on our national coat of arms and should be preserved.

Another example is the different perception of the Andes. To traditional residents the mountains represent a living entity, female, with its own will, that can benefit or destroy man; however, to new residents the mountains mainly represent aesthetic, sports and/or ecological values.

It has also been confirmed that these differences in appreciation of the environment by the two groups transcend the merely conceptual sphere, and the opposing positions are transferred to the tangible reality. This leads to a conflict of interest over the ownership and use of land, as in the case of traditional livestock farmers (cowboys) who feel curbed and discriminated against by the new owners of the mountains, who block the access to their land to be used for grazing, in some cases in order to prioritize the environmental conservation of the meadows.

Although the following analysis focuses mainly on the traditional human groups, in many cases the conflict described above appears, either latently or manifestly.

I. El Alfalfal-Los Maitenes

They are part of a process that started with the Agrarian Reform program during the Frei Montalva government; what were a number of “thatched huts” before or houses made of adobe and thatch (*cortadera*), scattered throughout the Colorado Alto Canyon, were concentrated in settlements, with brick and synthetic slate-roofed houses that are currently located next to the Alfalfal 1 plant (the first one) and near the Maitenes plant (the second). These GENER plants, together with the crushing plant of the Río Colorado mining company, are the relevant players in the common territorial space, on both the socio-economic and environmental levels.

Forms of production and agricultural-livestock activities also underwent remarkable changes in the community, and they have varied fundamentally on the basis of their relationship to property. When the residents of these communities were sharecroppers on the Palazuelas Farm, agriculture played a significant role: vegetables were sown for the farmers’ own consumption and for the market, wheat was sown to make their own bread; nowadays, a pickup truck drives up once a week to sell vegetables.

The Frei Government was succeeded by the Allende Government with the system of settlements, and the socio-economic structure changed once again. This was followed by the Military Government and the land became – and is currently – National Property administered by the Chilean Army. This fact conditioned the traditional activities in the current economic system of the residents of these communities, because for both the alfalfa harvest and for grazing, the farmers have to pay as sharecroppers or for pasturage respectively, mostly to the Army. These traditional activities are complemented with income from salaried work at the GENER Plant and the Río Colorado mining company, which is an important factor in the families’ current economic organization.

In regard to the use of water, the communities collect water from the Quempo stream in the case of Alfalfal, from a water intake located 3 kms from the locality, and from the Aucayes stream in the case of Los Maitenes, from a water intake located 2 kms. from the locality.

Regarding the organization of livestock raising activities of the local groups, collective work is based on family ties– although ownership of the livestock is individual, especially with regard to grazing activities, both in the movement or care of herds where rotation takes place, and in other stages of the production process, like shearing in the case of sheep.

Thus, we have the case of the Martínez Ortega, Carrasco Quezada, Ortega Espinoza, López Ortega, Ibarra Espinoza, Quezada Aguirre, Quezada Martínez, and Martínez Suárez families, etc., which manifest an intense feeling of attachment. This is expressed first of all by the permanence over time of the different generations, which have developed a system of social and economic relationships of reciprocity that are the basis of what could be called a mountain culture. This culture in turn determines a particular perception of the environment and is reflected in beliefs like the belief that the mountains are a living entity, with the will to influence man’s destiny, a feminine entity: mother mountain, which provides important benefits like water and meadows, but also causes disasters and takes away lives as it did in the 1987 landslide when four members of the Ortega family died. Despite this fact, the Ortega’s remain in the same place.

This culture is also reflected in a number of practices related to knowledge and management of mountain plants and their use in treating different diseases.

These community interests and feelings of attachment that characterize these populations have not been affected significantly over time, despite the action of two industries that have settled in the common territorial space, like GENER in the case of Alfalfal-Los Maitenes and the Río Colorado mining company, which has a crushing plant at km 11.

The former is already part of the community relationships in this sector, because it absorbs labor and facilitates the movement of livestock, thereby contributing to the strengthening of those families' economy. The latter, however, conditions the grazing activities of the neighbors in Los Maitenes to a certain extent, making it hard for them to move their animals due to the heavy truck traffic and charging for pasturage in the upper parts of El Colorado by the management of the property.

Despite this, the families expressed their firm will to remain on the land, adapting favorably to the changes that have occurred over time, and not fundamentally varying the productive structures related to livestock raising.

This same attitude is seen in the presence of the eventual execution of the Alto Maipo project, because the residents said that since "there will not be any significant modifications related to the property where livestock-raising is carried out"¹ (although strictly speaking they are only owners of the houses they live in), nor will there be any changes in the spatial location of the groups that might affect their composition or structure, they do not feel the project presents a threat to their staying on the land.

They also said there are no areas of great symbolic significance related to beliefs and magical-religious practices in this part of the area of influence of the project, which might be affected by its execution and violate the sense of identity and belonging, so the perception of the residents of these localities is that with the installation of the project jobs will be created, which, unlike what one might think, will enable them to remain on the land.

II. El Manzano

The following illustrates the phenomenon described above to perfection. As of the Agrarian Reform of the 1960s, the former sharecroppers on the El Manzano farm were given titles of deed and became smallholders, which was followed by the intense fragmentation and sale of property by smallholders to outsiders, who settled on rural recreational properties.

¹ This affirmation was literally expressed by people interviewed in the field. The PHAM will eliminate the flood-risk conditions existing in the El Alfalfal sector so it represents an indirect benefit to the community. The latter could make it easier for residents in the sector to regularize their status as land-holders.

Most of these old land-owning families like the Ortega Quezada's, Prado Olguín's, Montenegro Arriagada's and Muñoz Ibarra's are concentrated in a small sector in the eastern half of the locality which they themselves call "the upper half, the poor people's half," while the other half, which belongs to the new owners, is called "the lower half, the rich people's half."

The reduction in ownership by traditional neighbors means that there is barely any agricultural activity, not even for their own consumption so residents have to buy vegetables from storeowners in Puente Alto and small-scale livestock-raising barely contributes to cover subsistence because they have to pay for pasturage.

Payment for pasturage has become the main factor in the reduction of livestock raising in this sector and, in general, in the whole valley; too many of those interviewed, this activity is almost unproductive, because in addition to the payment factor they also suffer losses from predators, which is significant. There are testimonies stating that a puma can kill 15 sheep in one day and only eat part of one. The *buitre* (vulture), as the *condor* (condor) is known, concentrates on the young animals of all kinds of livestock, from calves to newborn goats. The complaint from these groups is that the SAG (Chilean Agricultural and Livestock Authority) does not allow farmers to control predators so the losses continue to add up every year.

In view of this situation, the young people have basically joined the labor force either as agricultural workers or day workers that clean the high-tension towers whose route passes near the locality.

This situation has also determined that the biggest threat to feelings of attachment or belonging, as well as the typical cultural characteristics based on a system of traditional social and economic relations that provide a feeling of identity, is the expansion of the ecotourism business, because those companies are also reducing the surfaces of pastures and meadows that livestock-raising families in this locality have traditionally occupied in order to turn them into recreational ecological spaces. A concrete example of this is the acquisition of land adjoining the Las Monjas sector (traditional summer grazing route of at least 3 families) by a group of foreigners who intend to develop an ecological community. These people have already announced that this season will be the last season for summer grazing and that, as of April 2008, herds will no longer be able to pass through their land. The reduction of space that affects these families in their livestock-raising activity determines a pessimistic view of the immediate future, and they are looking for new employment opportunities.

The eventual implementation of the Alto Maipo project appears in this scenario, and the expectations that the existence of this project has generated are divided into two radically opposed positions: the traditional families, especially the families involved in raising livestock, hope it will be executed while the new families in general disapprove of it. From this perspective it can be said the traditional residents of El Manzano want the project to be executed, because with the jobs it can provide they will be able to solve their problems of subsistence, which will definitely guarantee their permanence on the land.

III. El Canelo

In El Canelo the situation is similar to El Manzano with regard to property. According to informers, forty years ago there were eight houses and a school. The land was split up and sold to individuals and entrepreneurs involved in ecotourism. There was also important agricultural activity which included, among others, the growing of corn, potatoes, wheat, and strawberries. At the present time residents have to buy those products from shopkeepers in Puente Alto.

Since that time the population that has been established in this sector has increased so much that the lack of space is a serious problem, to the point there is not enough room for a soccer field. But the most serious problem, undoubtedly, is the lack of potable water in some sectors like Las Araucarias where forty families have settled and there are only 2 water meters. Many of these houses are occupied on the weekends, and the neighbors have to go up to the highway to get water in cans.

The traditional families that remain, like the Urtubia, Contreras, and Vergara families, still maintain livestock production on a small scale. In the last few years this activity has had to deal with a number of difficulties and costs. If it were not for other complementary activities like trade or salaried work, these families would not be able to cover their subsistence satisfactorily. The threats to this activity are multiple: first, they have to pay for pasturage, an average of CLP 1,200 per month per animal to the Army to use the Las Tórtolas farm. In addition, they have to face the activity of natural predators and their permanent disagreement with seeing themselves deprived of access to land belonging to their neighbors in the ecological community and the Lagunillas Farm. This latent conflict, which has often been expressed, between the livestock-raising community and the ecological or environmental community, has affected interests and collective practices in the traditional use of space, undermining the feelings of attachment and belonging to the land of traditional families.

The Alto Maipo project appears in this scenario and, as in El Manzano, the more traditional groups, especially livestock farmers, regard the execution of the project positively. First of all, because the level of unemployment among permanent residents of the sector is high, but also because they hope that roads will be built that will facilitate their transportation, as well as solid fences along the boundaries, which prevent cattle from passing onto farms where they are prohibited, since the farmers risk the loss of their animals when this happens. Thus the original residents of the locality consider that execution of the project would help revert some of the problems they face in order to give continuity to the practice of livestock breeding and that it would help finally to strengthen traditional collective practices, which are the basis for feelings of attachment and belonging.

IV. Baños Morales-Lo Valdés

A distinction should be made between the groups of seasonal livestock farmers and the group of “residents”, also seasonal, because most of the houses and establishments are unoccupied during the Autumn, Winter and part of the Spring.

There is no well-defined cultural identity, because they are “summer places” that tourists visit in the summer months, where the tourist business is practically all that enables these villages to survive.

In this case, for the group of shepherds on the way to new pastures, the concept of rootedness or belonging is fairly relative, but as a group they are interested in maintaining their activity so they think it is relevant for the summer pasture routes not be obstructed and for them to be able to continue to use the grazing areas without running any risks. From this perspective, in general the advantages in the implementation of a project of this nature stand out, since the possibilities of obtaining income would be increased, on the one hand because there would be jobs, but also because the herders know all the geographical features in the sector in detail, and they could serve as guides in the early stages of the project. In fact, some of them currently act as guides to technicians, who are periodically measuring the water level at different points on the streams.

V. El Volcán

An important old mining town in the Cajón del Maipo. The railroad line extended to this place to ship products derived from mining activity. Twenty-five traditional families actually survive, most of them by raising livestock, which they complement with income from the sale of cheese, homemade bread, empanadas, etc., to tourists, plus the collection and sale of scrap metal extracted from the old mining facilities, and sale of fossils, etc., making instability a constant factor in the economic organization of these families. In addition, they do not have any right to the property where they live, not even their houses belong to them; half of the village belongs to the “Vulcanite” mining company and the other half to what they call “Mercedita’s place.”

This series of unfavorable facts confirms the attachment that families that have stayed there feel for the land. The will to stay shown by the residents is remarkable due to the multiple adverse conditions they have to confront in many aspects: weather, social, environmental, etc.

They are often isolated in Winter because of snow on the road, which presents a number of additional problems: the return home of students from school in San Gabriel is uncertain; communications are difficult; the number of tourists is restricted; the road becomes muddy, etc.

The isolation also determines that families split up, since many children have to stay with relatives in San Gabriel or San José. A bus leaves very early every morning and returns at 9:30, so if students who live in El Volcán do not get a lift, they have to return home late at night, which does not leave them any time for homework or recreation. It should also be noted that on some winter days the bus cannot drive at all. This isolation factor has been one of the reasons why many families have emigrated.

In the environmental aspect, these families experience the rigors of suspended dust created by trucks from the Lo Valdés mining companies going to and from the gypsum plant of El Romeral since the paved road only extends as far as San Gabriel. Truck traffic is intense, and it goes on day and night. This is the basic situation in which the hydroelectric project will have to be implemented. Therefore, most of the residents hope the road will be paved since they think the increase in traffic would increase contamination from suspended dust, discouraging them from remaining there.

In addition, there are positions in favor of the Alto Maipo project among residents who think it is going to create jobs, and also against the project among those who think the water flows are going to decrease, affecting the irrigation of alfalfa fields, which they also visualize as a threat to their permanence.

VI. El Romeral

They do not have any kind of interests or collective practices related to any productive activity. Most of the residents work as caretakers on rural residential properties for individuals or as truck drivers who travel from the Lo Valdés mine to the gypsum plant located in this locality, or they work as workers at the same plant. The neighbors suffer the same weather and environmental rigors as the residents of El Volcán where many houses are only inhabited by heads of households while the rest of the family group lives in Puente Alto.

Expectations among residents of staying on the land increase on the basis of the new jobs the Alto Maipo project might generate, because they think the road will be paved which would enable them to solve the problem of isolation in the winter and thereby reduce the disaggregation of families.

VII. San Gabriel

San Gabriel represents the extreme opposite of the reality referred to above, because it has undergone a process of demographic growth, produced partly by the immigration of groups coming from other places in the same commune.

This demographic growth leads to growth of the inhabited space, with the locality extending in an aggregate of settlements of different kinds. There are even some that were eradicated at the time of the military government from other parts of the metropolitan region, others that are immigrants from other places in the commune, who have settled in wooden houses they built themselves, and there are also housing developments with subsidy programs, etc.

A process of social differentiation has also occurred in the town, based on demographic growth. There is a trend among some sectors to settle in small rural hamlets: the unemployment and poverty index is high, with criminal activity and drug consumption recorded among groups of young people.

In the traditional community, small-scale livestock farming has disappeared due to a lack of space and the price of pasturage or alfalfa, but some families remain with a medium-sized volume of livestock like the Bustamante's, who move the animals along the San Nicolás stream and Laguna Negra.

Different groups express different ways of feeling they belong, are attached to, and identify with, the land. Groups that can be characterized as "rural working" class visualize the change that might occur if the project is implemented as a positive event, because they think it could create employment to alleviate the situation of housing shortages and unemployment. Groups composed of families in trade think it might be good business. But groups of families involved in animal husbandry think that their collective interests might be affected by interference with the movement of cattle to the Laguna Negra area.

VIII. San José de Maipo

This reproduces another type of social structure, closer to the structure of the metropolis. There are different socio-economic sectors, communal institutions, hospital, police station, fire department, etc.

It is clear there are multiple views of the change and the possible impact on the lifestyle or sense of identity and belonging of its inhabitants based on new investment projects. However, the phenomenon of this duality in the assessment of change based on the execution of the GENER project appears in a much more evident form here, and it is more intense because of the social interaction, dissemination, publication of bulletins and magazines, public acts, etc.

The opposing positions in this case would be the position of the ecologists and environmentalists versus the sectors of lower economic resources and shopkeepers in San José de Maipo, since the latter have expectations about the creation of employment.

The families of medium-scale animal farmers keep their herds far from the sector, on the El Yeso farm, El Colorado, and the upper part of the El Volcán River so they do not perceive any interference of their activity with the works of the project.

It is considered locally that some type of generic alteration might occur in regard to the traditional lifestyle and the residents' way of doing things, with their own pace and timing, especially in the construction stage of the project, when they think there will be more activity and a floating population.

3.1.2 Analysis of Human Groups in Relation to the Practice of Raising Livestock

I. Alfalfal-Los Maitenes

In general, the localities of El Alfalfal and Los Maitenes operate as one unit: their residents share productive activities, many are related by blood, and they participate in the same soccer club called Los Maitenes, although the field is located in El Alfalfal. Notwithstanding the above, they have separate Neighborhood Associations since this is more favorable for them in their relationship with the Municipality and other organizations.

In agriculture, only a few parcels are observed that produce alfalfa, since the local residents stopped growing crops in the 1970s because they are not owners, and they have to work the land on the basis of the sharecropping system with the Army (which has the land under its power), which is not favorable to them economically.

This means the system for supplying fruits and vegetables is partly based on acquisition from an outside tradesman, who brings products up to them in a truck once a week.

Despite the transformations in subsistence agriculture, livestock-raising activities remain. A significant proportion of more than 50% of the families conserve the form of production that involves moving the animals to new pastures, which means experiencing the animals' different cycles (feeding, mating, breeding), moving together with the livestock through the

foothills and mountains. Practically 100% of the families are related to grazing, as a result of the blood ties that link them to one another. This means that in every family group there is at least one member who is dedicated to raising livestock. That family member, in several cases, is in charge of leading and accompanying his own animals, and the animals of other members of his extended family, and even other family groups, through the foothills and mountains.

The livestock farmers of El Alfalfal-Los Maitenes use two traditional routes:

- Following the basin of the Colorado River or
- Moving along the Olivares stream.

The Colorado River route: starts in the sector of the La Paloma stream where the animals spend the winter, locally called the winter pasture, which is located above the barrier administered by GENER. From La Paloma the livestock moves toward the east during the spring and summer to spend the summer, entering through the Colorado river until it reaches the Tupungato canyon, the Museo canyon, and the Cinque meadow. However, there are intermediate stages on the route that coincide with the animals' biological cycles, like the land called Potrero Nuevo where calving or foaling, which is the birth of the baby animals, takes place from October to early December. Movement starts up again from there, going inland to the meadows of Aguas Buenas, Novillo Cuyano, Reicano, Parraguirre, etc. The trip back starts at the end of the summer with the animals staying in Potrero Nuevo until April when they come down to spend the winter on the La Paloma stream.

The groups of local herders are joined by the so-called "coastal men", from the localities of Curacaví (Metropolitan Region) and Colliguay (Valparaíso Region), which handle an important volume of cattle (1000 to 1500 head of cattle on average) unlike the local groups that can be categorized as small livestock farmers (15 head of cattle and 15 horses on average, with a few goats added in some cases).

These groups from outside the Cajón del Maipo transport their cattle in trucks to Los Maitenes. From there they start herding the cattle along the road, entering at the barrier of the Alfalfal 1 plant, and finally settling in the meadows of the Museo Canyon and Cinque, whereas local herders drive their animals to the Tupungato canyon.

The route along the Olivares stream: This route starts by rounding up the cattle in the sector of El Durazno, adjoining El Alfalfal on the northeast where the cattle spend the winter. They are driven from there towards the confluence of the Olivares stream and the Colorado River, moving inland along the Olivares stream and stopping over in Los Maitenes and El Frío for the "calving" and then continuing in December to the sector of Vegas Amarillas. In early autumn they return along the same route with the same stops. Some groups of Coastal Men from Curacaví and Colliguay also follow the route along the Olivares stream.

Groups of livestock men that go through El Colorado have to pay the Río Colorado mining Company for pasturage during summer grazing, and they have to pay the Chilean Army in the winter. Last year they had to pay CLP 300 to CLP 400 per month per goat or sheep and CLP 1800 per animal for the season, while the price of cattle and horses varied between CLP 6,000 and CLP 7,000 per animal for the season.

In the case of summer pastures on the Olivares stream, groups that settle on the left bank of the stream in the sector of Vegas Amarillas do not pay for pasturage (the land belongs to National Properties) while groups that settle on the right bank have to pay the Army for pasturage. Local groups are located on the left bank, while the “coastal men” are on the right bank.

A detailed list of the families of livestock farmers from both localities is shown below:

**Table 3.1.2.1
Family of Livestock Farmers from El Alfalfal**

| Livestock Farmer | Type of animals | Grazing place |
|-------------------------|---|----------------------|
| Claudio López | Cattle, Sheep, Horses, Mules, Summer pastures | El Colorado |
| Lorenzo López | Goats, Cattle, Sheep, Horses, Mules | El Colorado |
| Víctor Fajardo | Cattle, Sheep, Horses | El Colorado |
| Miguel Fajardo | Sheep, Cattle, Horses | El Colorado |
| Mauricio Ortega | Sheep | El Colorado |
| Angelina Ortega | Sheep, Horses, Cattle | El Colorado |
| Luis López | Sheep, Horses | El Colorado |
| Walter Saavedra | Horses, Cattle, Goats | El Colorado |
| Emilio Martínez | Cattle, Sheep, Horses | Olivares |
| Renato González | Cattle, Sheep, Horses | Olivares |
| Miguel Suárez | Sheep, Horses | Olivares |

**Table 3.1.2.2
Family of Livestock Farmers from Los Maitenes**

| Livestock Breeder | Type of animals | Grazing place |
|--------------------------|------------------------------|--------------------------|
| Ismael Ortega | Cattle, Goats | Olivares-Aucayes (goats) |
| Manuel Ortega | Cattle | Olivares |
| Gerardo Ortega | Cattle | Olivares |
| Marcelino Ortega | Sheep, Goats, Horses, Cattle | Olivares |
| Carlos Arenas | Goats, Horses, Sheep, Cattle | Olivares |
| Pedro Quezada | Goats, Horses, Cattle | Olivares |
| Mario Carrasco | Goats, Horses | Olivares |
| Jesús Carrasco | Goats, Horses | Olivares |
| Miguel Carrasco | Cattle, Horses | Olivares |
| Lorenzo Astorga | Cattle, Horses | El Colorado |
| Carlos Carrasco | Cattle, Horses | El Colorado |
| Alfredo Astudillo | Horses, Cattle | El Colorado |
| Paulina Díaz | Sheep, Horses | El Colorado |
| Hernán Astudillo | Horses | El Colorado |
| Israel Contreras | Goats | El Colorado |
| Ismael Gutiérrez | Goats | El Colorado |
| Ramón Mella | Horses, Cattle | El Colorado |
| Emilio Quezada | Cattle, Horses | Olivares |
| Alicia Suárez | Horses, Cattle | El Colorado |
| Emilio Carrasco | Cattle, Horses | Olivares |

II. El Manzano

There are sixteen traditional families of smallholders or former smallholders in this locality, and several of these families still carry out activities related to small-scale livestock farming, despite the intense fragmentation of the property and its sale to new inhabitants that are joining the community, mostly as owners of rural recreational properties. The new owners partly carry out their economic activities in the community, but another group works in companies, institutions or organizations domiciled in other communes of the Metropolitan Region and the country.

Most of the traditional families are concentrated in a small sector located in the eastern half of the locality. They have gotten rid of land they occupied before in agriculture, with production for their own consumption and the market. Nevertheless, livestock-raising subsists, and it is complemented by income from the salaried work of members of each family group, constituting an important factor in their economic organization.

Livestock farmers in El Manzano use two routes:

- Following the El Manzano stream
- Moving through the Las Monjas sector

Route of the El Manzano stream: it starts by a roundup in the sector called El Durazno on one side of the stream, three kilometers from the locality. The animals move from that place as the season advances, following the basin of the stream to a place called Vega Honda.

The route of the Las Monjas sector: the livestock stays east of the Los Maitenes-Alfalfal highway in the winter, at the height of kilometer 5, and then it is driven, as the spring-summer period advances, along the basin of the Las Monjas sector to a sector called Las Vegas del Culén.

Pasturage must be paid for each sector. For the El Manzano stream it is paid to the owner of the El Manzano farm, and for the Las Monjas sector it is paid to the new owners of this property (which was previously part of the El Manzano Farm). They are foreigners who are part of an ecological community that, according to local informers, have communicated that they will suspend access to the livestock farmers as of April 2008.

Table 3.1.2.3
Families of Livestock Farmers from El Manzano

| Livestock Farmer | Type of animals | Grazing place |
|------------------|-----------------------|-------------------|
| Miguel Ortega | Horses, Cattle | Las Monjas Sector |
| Fidel Ortega | Cattle, Sheep, Horses | Las Monjas Sector |
| Jorge Prado | Cattle | Las Monjas Sector |
| Francisco Prado | Cattle | Las Monjas Sector |
| Rodolfo Román | Horses | El Manzano Sector |
| Manuel Prado | Horses, Cattle | El Manzano Sector |
| Horacio Mancilla | Horses | El Manzano Sector |
| Fernando Campos | Horses, Cattle, Sheep | El Manzano Sector |
| Segundo Suazo | Horses, Cattle | El Manzano Sector |

| Livestock Farmer | Type of animals | Grazing place |
|-----------------------|-----------------|-------------------|
| Pedro Oyarce | Horses | El Manzano Sector |
| Jorge Montenegro, Jr. | Cattle, Horses | El Manzano Sector |
| Jorge Montero padre | Horses, Cattle | El Manzano Sector |
| Artemio Arraigada | Horses | El Manzano Sector |
| Luis Hernández | Horses | El Manzano Sector |

III. El Canelo

A few traditional families are also settled in this locality, who are dedicated to livestock farming activities. This type of family are small-scale livestock farmers who complement the productive activity of animal husbandry with income from trade (most of them have businesses on the side of the road that goes through El Canelo) and the salaried work of some of the members of the family group.

As in El Manzano, agricultural practices have tended to disappear as a result of the lack of space resulting from the fragmentation and sale of property.

Livestock farmers in El Canelo use only one area:

- Las Tórtolas Sector

Las Tórtolas Sector: both winter grazing and summer grazing take place here between Km. 5 and Km. 9 of the highway to Los Maitenes. Movement of livestock is limited to a very specific, restricted area. During winter grazing the livestock remains in sectors near the highway, and as the spring-summer season advances it moves southeast to the border of the Lagunillas farm, which they are not authorized to enter by its owner, as affirmed by the local people who were interviewed. In early Autumn they return to the starting place.

These families have formed a group of small-scale livestock farmers, which also includes families that have settled between Km. 6 and Km. 13 of the highway to Los Maitenes. There are family ties with these families, which determine some forms of collective work and in some cases common ownership of part of the herds.

The cowboys drive the animals to their location, since access is only along a trail located at Km. 9. The cowboys that are settled in the indicated stretch of the highway to Los Maitenes drive their animals along the side of the road and then herd them in towards Las Tórtolas on the abovementioned track.

In regard to payment of pasturage in the Las Tórtolas sector, the Army must be paid CLP 1,200 per month per animal. However, during this season, due to the lack of grass, the livestock farmers would be exempt of this payment and they will have to buy alfalfa at CLP 2,000 per bale approximately.

**Table 3.1.2.4
Families of Livestock Farmers in El Canelo**

| Livestock Farmer | Type of animals | Grazing place |
|--------------------------|------------------------|----------------------|
| Enrique Urtubia | Horse, Cattle | Las Tórtolas |
| Ramón Urtubia | Cattle, Horse | Las Tórtolas |
| Antonio Contreras | Cattle, Goats | Las Tórtolas |
| Margarita Contreras | Goats, Cattle | Las Tórtolas |
| Simón Contreras | Horses | Las Tórtolas |
| Luis Vergara, Jr. | Cattle | Las Tórtolas |
| Eduardo Zamora | Horses | Las Tórtolas |
| Antonio Ortega | Cattle, Horses | Las Tórtolas |
| Luis Vergara, Km. 9 | Horses, Cattle | Las Tórtolas |
| Brunilda Contreras Km. 9 | Horses, Cattle | Las Tórtolas |
| Héctor Aguirre, Km. 6 | Horses, Cattle | Las Tórtolas |
| Segundo Carrasco, Km. 13 | Horses, Cattle | Las Tórtolas |
| Luis Martínez, Km. 9 | Horses, Cattle | Las Tórtolas |

IV. Baños Morales

Baños Morales is more of a way station than a permanent settlement of livestock farmers. Except for some seasonal sites located on the far east of town, which belong to groups of livestock farmers, the rest of the houses in the locality belong to individuals who use them in the summer, or are establishments to lodge mountaineers and tourists who go to the hot springs, which creates an identity as a summer place with a small stable population.

Regarding grazing, there is a group of families who live permanently outside the locality and are related by family ties. They have individual ownership of the herds, but the work involving the transfer and care of the animals is collective. These families come from the Chacritas sector (Núñez), El Volcán (Venegas-Núñez) and San José de Maipo (Núñez). There is also a family of livestock farmers in the sector from Punitaqui, whose herd of goats spends the winter in Curacaví and is moved in trucks to Baños Morales at the beginning of the spring-summer season.

The seasonal livestock farmers in Baños Morales are organized in the “Livestock Farmers Association of Baños Morales.” Among other activities, they are dedicated to tourism, which provides significant income and is complemented by raising livestock.

Because of the harsh winter, very few families remain in Baños Morales during the season; those that do basically care for the tourist establishments.

The livestock farmers that start from Baños Morales use different routes and areas:

- Canyons between El Morado stream and Las Placas stream
- La Engorda Ravine
- Colina Stream

Canyons between El Morado stream and Las Placas stream: during the summer season, one is the sector that is located between the El Morado stream and the Las Placas stream,

which belongs to the Quebrada de Morales farm. Livestock farmers pay the respective landowners for pasturage. The families in the commune that use these areas for grazing come from Chacritas, El Volcán, San José de Maipo, Queltehues, and Romeral.

Sector of La Engorda Ravine: this is used for summer grazing, and it belongs to the farm of the Covarrubias family, residents in Queltehue, to whom pasturage is paid. In this sector the families also come from the localities in the commune that have already been mentioned.

Colina Stream: this is the route where the “coastal men” go inland, until they reach the Nieves Negras, El Azufre, and Carreño canyons with an approximate volume of 500 head. Pasturage has to be paid to the respective landowners in all those sectors.

Some groups make intermediate stops in the sector of La Arena and El Clarillo during the first month of the summer pasture (October), and then as the season advances they go into deeper sectors on the abovementioned routes.

The Núñez-Venegas families concentrate their animals in the sector of El Volcán in the winter. The herds that come from El Romeral stay in the El Piche sector, near this locality, during the winter. The herds of the small-scale livestock farmers in the locality of El Volcán spend the winter near their settlements. The herds of the Covarrubias family do the same, settled in Queltehue and they use the meadows of the La Engorda ravine during the summer.

Table 3.1.2.5
Families of Seasonal Livestock Farmers in Baños Morales

| Livestock Farmer | Type of animals | Grazing place |
|---------------------------------|------------------------|--------------------------------|
| Ramón Medina | Horses | La Arena, El Morado-Las Placas |
| Israel Ibacache | Goats | La Arena, El Morado-Las Placas |
| Cristóbal Núñez | Horses, Cattle | La Arena, El Morado-Las Placas |
| Fernando Venegas Núñez | Horses, Goats, Cattle | La Arena, El Morado-Las Placas |
| Roberto Molina | Horses | La Arena, El Morado-Las Placas |
| Jaime Núñez | Horses, Cattle | La Arena, El Morado-Las Placas |
| Octavio Núñez | Horses, Cattle | La Arena, El Morado-Las Placas |
| Luis Venegas Núñez | Horses, Cows | La Arena, El Morado-Las Placas |
| Luis y Moisés Núñez (Chacritas) | Cattle, horses, goats | La Engorda |

V. Lo Valdés

There are no families related to cattle-raising activity in the locality of Lo Valdés, except one family that is basically dedicated to tourism and keeps a small herd of 10 sheep that it does not move up to the mountains, since it feeds them with pelletized alfalfa, and a family from Santiago (whose head of household is a foreigner who is building a tourist lodge), which keeps a small herd of goats in partnership with the Núñez from Chacritas, who manage the livestock. The rest of the locality consists of the Lo Valdés lodge (formerly known as the German lodge) and a few houses that are occupied during summer vacations. Because of the harsh winters, there are very few families who remain in the sector during that season, and those who do are dedicated to taking care of the tourist establishments.

VI. El Volcán

An old mining-cattle raising settlement that is currently occupied by 25 families that have remained in the locality, despite the intensive migration of the last few years due to the cessation of mining activity, unemployment, isolation, constant traffic of trucks transporting caliche from the Minera El Volcán to the Plant in El Romeral, and the reduction of herds.

There is grazing activity however, which is an important factor for the economy of the families remaining in the sector, and it is complemented by the production of vegetables for their own consumption, the sale of cheese to tourists, the collection and sale of scrap metal from the old mining sites, and even the sale of fossils.

Livestock Farmers in El Volcán, routes and areas:

- El Yesillo sector, from the El Volcán water intake to the south
- El Morado Stream
- Colina Stream

These small-scale livestock farmers follow different routes during the summer. Some groups go inland through the El Yesillo sector, from the El Volcán water intake south. Others follow the route of the El Morado stream. Some remain in the sector or go to Chacritas, but most of them move their cattle along the Colina Stream. In April the herds return to their winter pastures, which are located in sectors near the locality.

Table 3.1.2.6
Families of Seasonal Livestock Farmers in Baños Morales

| Livestock Farmer | Type of animal | Grazing place |
|-------------------------|-----------------------|---|
| Francisco Rojo | Horses | El Yesillo |
| Juan Ortega | Goats, Horses | Colina Stream |
| Raúl Enaro | Goats, Horses | Chacritas-Las Arenas-El Morado-La Engorda |
| Lidia Tamayo | Horses | Summer grazing in the sector |
| Augusto Escobar | Horses | El Yesillo |
| Patricio Rojo | Horses | Summer grazing in the sector |
| Flor Coronado | Horses | Colina Stream |
| Luis Díaz | Horses | Colina Stream |
| Alberto Calderón | Horses | Colina Stream |
| Luis Cavieres | Horses | Colina Stream |
| Tito Silva | Goats | Chacritas (Winter and Summer) |
| Patricio Astorga | Cattle, Horses | El Yesillo |
| Carlos Barrios | Goats | Chacritas |

VI. El Romeral

This consists of a group of no more than eight houses that are located next to the road, where most of the residents are dedicated to taking care of recreational residential properties and growing alfalfa. Some of the heads of household work as drivers and employees at the gypsum plant that belongs to the El Volcán mining company. Several of these houses are only lived in by the heads of household, while their children live in Puente Alto with their

mothers because of the problem involved in accessing elementary and high school education while remaining in this locality in the winter, where they are often cut off by bad weather.

Summer pasture route:

- From Las Melosas south

Table 3.1.2.7
Family of Livestock Farmers in El Volcán

| Livestock Farmer | Type of animals | Grazing place |
|--------------------------|------------------------|-------------------------------|
| Olivares Quintana Family | Cattle, Horses | From Las Melosas to the south |

VII. Yeso River Road

There are six families in this sector who have traditionally been dedicated to livestock-raising, although this activity is currently insufficient to assure a livelihood, which has led to the significant migration of young people who want to join the world of salaried work and contribute income to their families. Nevertheless, one family (Campos) has settled next to the road parallel to the El Yeso river, near the confluence with the Maipo river, which has a considerable number of cattle (150 goats, 180 sheep, 75 cattle, and 60 horses).

In general the families of small-scale livestock breeders, except for the Campos family, manage their livestock in the sector in winter and summer, moving farther east only as far as Km. 17. Ownership of the livestock is individual, and there are no collective initiatives for livestock-raising work. Agricultural activity, which existed on a small scale a few years ago with mostly potatoes, beans and vegetables being sown for the families' own consumption, is currently not practiced. These families also pay pasturage to the landowners so livestock-raising is increasingly less profitable.

Grazing Route:

- La Engorda Ravine
- El Yeso River

La Engorda Ravine: the Campos family is the only one that exceeds the perimeter of the village so in order to access the La Engorda ravine, they move the livestock in the summer to Baños Morales on trucks as far as the Volcán water intake and then continue driving them to the meadows in the La Engorda ravine.

El Yeso River: The livestock of the "coastal men" also moves through this sector, from Curacaví, Colliguay and Melipilla, and it contributes the highest number of animals, between 1000 and 1500 cattle and 600 to 700 goats. This livestock is located in the deepest canyons of the mountains, following the basin of the El Yeso river, and they are transported only as far as kilometer 14 in trucks. From there the animals continue on foot, due to the tight curves in the road.

**Table 3.1.2.8
Family of Livestock Farmers on Yeso River Road**

| Livestock Farmer | Type of animal | Grazing place |
|-------------------------|------------------------------|--------------------------------|
| Juan Tobar Abarca | Goats | In the sector |
| Sonia Bueno | Goats | In the sector |
| Evaristo González | Goats | In the sector |
| Francisco González | Goats, Cattle | In the sector |
| Orlando Contreras | Goats, Sheep, Cattle, Horses | In the sector as far as Km. 17 |
| Luis Campos | Cattle, Goats, Horses, Sheep | La Engorda |

VIII. San Gabriel

Although there is livestock raising of some importance, despite the intense transformation and demographic growth of the locality where the few traditional families who have lived there for some time have been joined by a significant immigrant population, fundamentally from different places in the commune, who have been established in public housing developments.

Trail and grazing areas:

- San Nicolás Stream to the area around the San Lorenzo mountain and the area around Laguna Negra

There is just one traditional route to the summer pastures. The livestock is moved along the San Nicolás Stream to the area around the San Lorenzo mountain where it remains from October to November. In November the animals move east to graze during the summer in the area around Laguna Negra. In April the livestock returns along the same route, and it stays in the lower part of the San Nicolás stream in the winter.

**Table 3.1.2.9
Families of Livestock Farmers in San Gabriel**

| Livestock Farmer | Type of animals | Grazing place |
|-------------------------|------------------------------|---------------------------------|
| Federico Mejías | Cattle, Horses | San Nicolás Stream-Laguna Negra |
| Carlos Escobar | Cattle, Horses | San Nicolás Stream-Laguna Negra |
| Jaime Vásquez | Cattle, Horses | San Nicolás Stream-Laguna Negra |
| Raúl Bustamante | Cattle, Horses | San Nicolás Stream-Laguna Negra |
| Miguel Rodríguez | Cattle, Goats, Sheep, Horses | San Nicolás Stream-Laguna Negra |
| Raúl Cortés Bustamante | Cattle | San Nicolás Stream-Laguna Negra |

IX. San José de Maipo

The traditional livestock-raising families in this locality share this activity with other forms of socio-economic organization that are typical of the city. The education level and

communications flow with Santiago lead many of the members of these families to venture into salaried work. Nevertheless, the old livestock-raising practices are maintained among a small number of families.

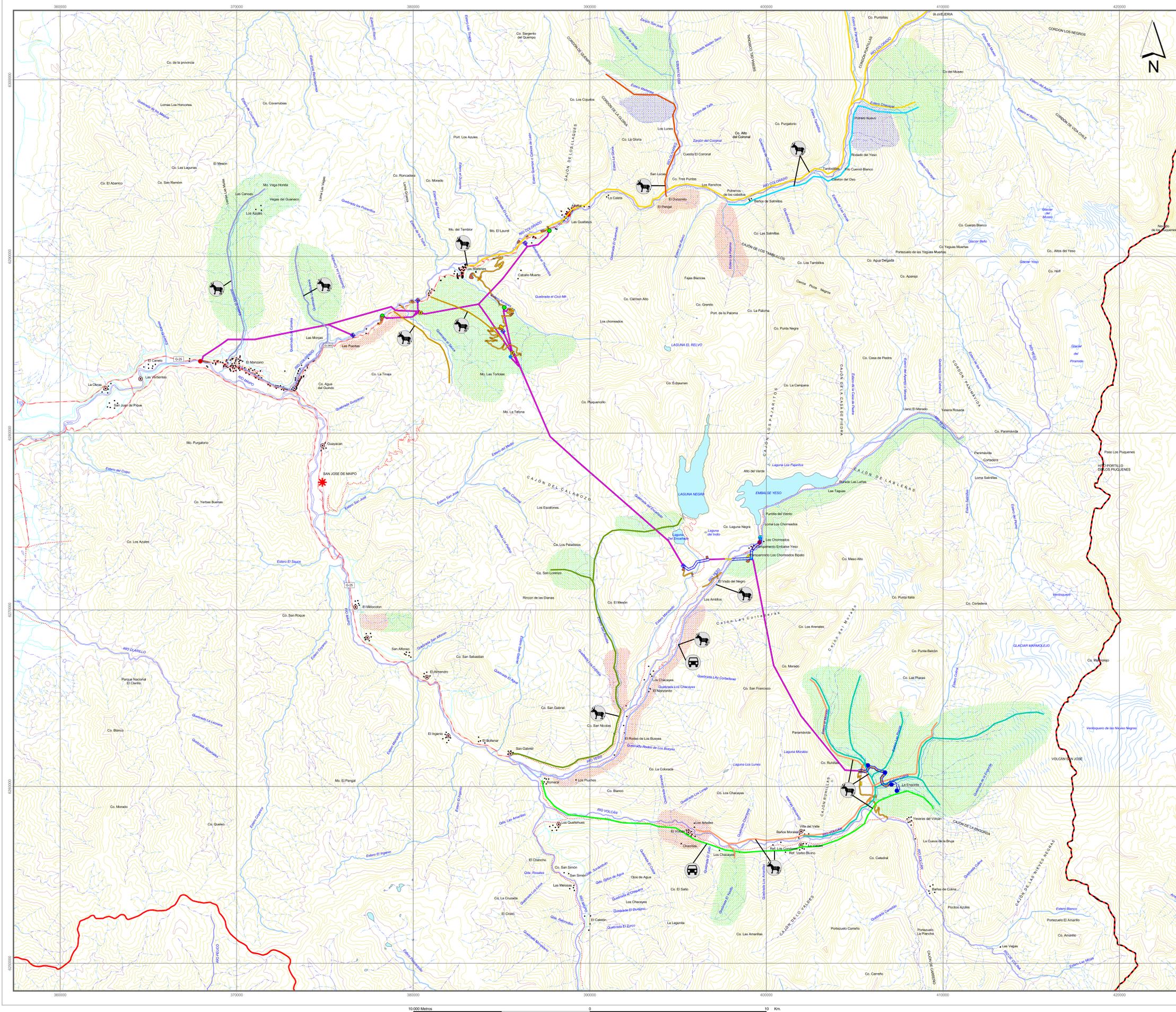
Trail and grazing areas:

- El Yeso Farm
- Olivares and El Colorado

Most of the livestock moves in the summer and winter around the sector of the El Yeso Farm, southwest of El Melocotón. Nevertheless there are two families of farmers that keep their livestock in the sector of Olivares and El Colorado with the herds of the Alfalfal-Maitenes families.

Table 3.1.2.10
Families of Livestock Farmers in San Jose de Maipo

| Livestock Farmer | Type of animals | Grazing place |
|-------------------------|------------------------|--------------------------|
| Daniel Mardones | Cattle | El Toyo Farm |
| Víctor Mardones | Cattle | El Toyo Farm |
| Fortunato Mardones | Cattle | El Toyo Farm |
| Heriberto Ríos | Cattle | Olivares and El Colorado |
| Aurelio Escobar | Horses | Lagunillas |
| Eduardo Guajardo | Cattle | El Toyo Farm |
| Jorge Andrade | Cattle | El Colorado |
| José Alarcón | Cattle | Las Tórtolas |



SIMBOLOGÍA

RUTAS TROPERAS

- Ganaderos Costinos: Ruta cajon del museo Subida - Bajada
- Ganaderos El Manzano: Rutas Estero El Manzano y las Monjas Subida - Bajada
- Ganaderos Los Maitenes y El Alfalfa: Ruta Rio Colorado Subida - Bajada
- Ganaderos San Gabriel: Rutas Estero San Nicolás y Laguna Negra Subida - Bajada
- Ganaderos Baños Morales: Rutas La Arena y Estero El Morado Subida - Bajada
- Ganaderos El Volcán: Rutas Estero El Morado y Estero Colina Subida - Bajada
- Ganaderos Romeral: Ruta Baños Morales / Vega de la Engorda Subida - Bajada
- Ganaderos El Canelo: Ruta Campo Las Tórtolas y Estero Aucayes Subida - Bajada
- Ganaderos Costinos: Ruta camino El Yeso Subida - Bajada
- Ganadero Los Mitenes: Ruta Rio Olivares Subida - Bajada

Transporte de Ganado en Camión
Arreo de Ganado

ÁREAS DE PASTOREO

- Veranada
- Invernada
- Parición

Localidades
 San José de Maipo

Curva de Nivel

- Curva nivel índice
- Curva nivel índice glaciar
- Curva nivel intermedia glaciar
- Curva nivel intermedia

Vialidad

- Camino pavimentado
- Camino ripio
- Camino tierra
- Huella

Hidrografía

- Rio
- Estero
- Quebrada intermitente
- Quebrada permanente
- Embalse y laguna

Obras

- Bocanoma
- Captación
- Cavema máquina
- Descarga
- Portal acceso
- Obra Toma Ducto
- Obra Toma Ducto Los Maitenes
- Ventana
- Empalme
- Puente
- Pozo
- Estanque de Carga
- Camino Projectado
- Trazado túnel
- Ducto
- Cámara de carga

Base Cartografica: Cartas Topograficas IGM Digital, escala 1:50.000

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| ESTUDIO DE IMPACTO AMBIENTAL PROYECTO HIDROELÉCTRICO ALTO MAIPO | | | |
| TÍTULO RUTAS TROPERAS Y ÁREAS DE PASTOREO ALTO MAIPO | | | |
| ESCALA: | FECHA: | LÁMINA: | REV: |
| 1:75.000 | MAYO 2008 | 1 | 0 |
| PREPARADO POR: | | PREPARADO PARA: | |
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