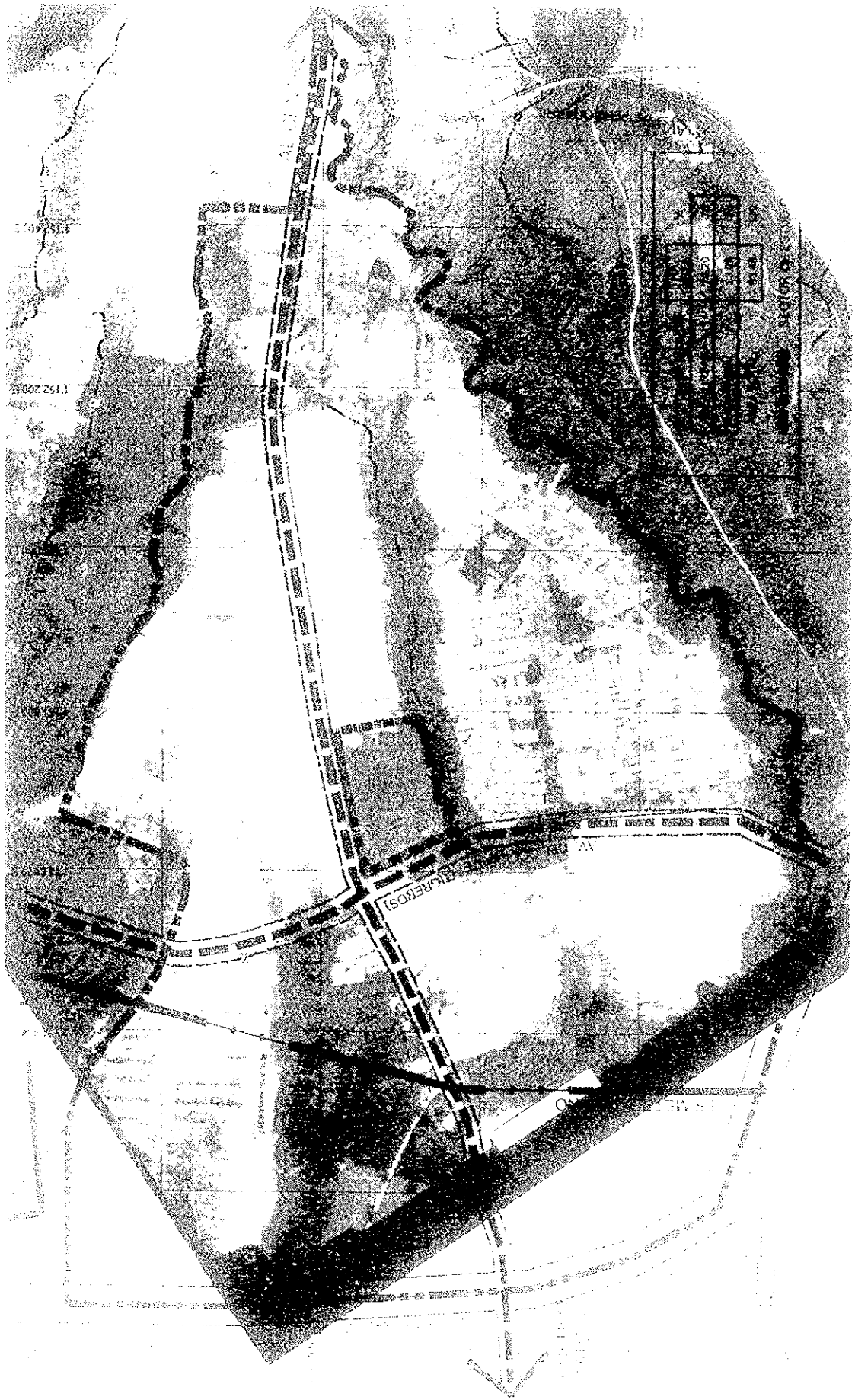




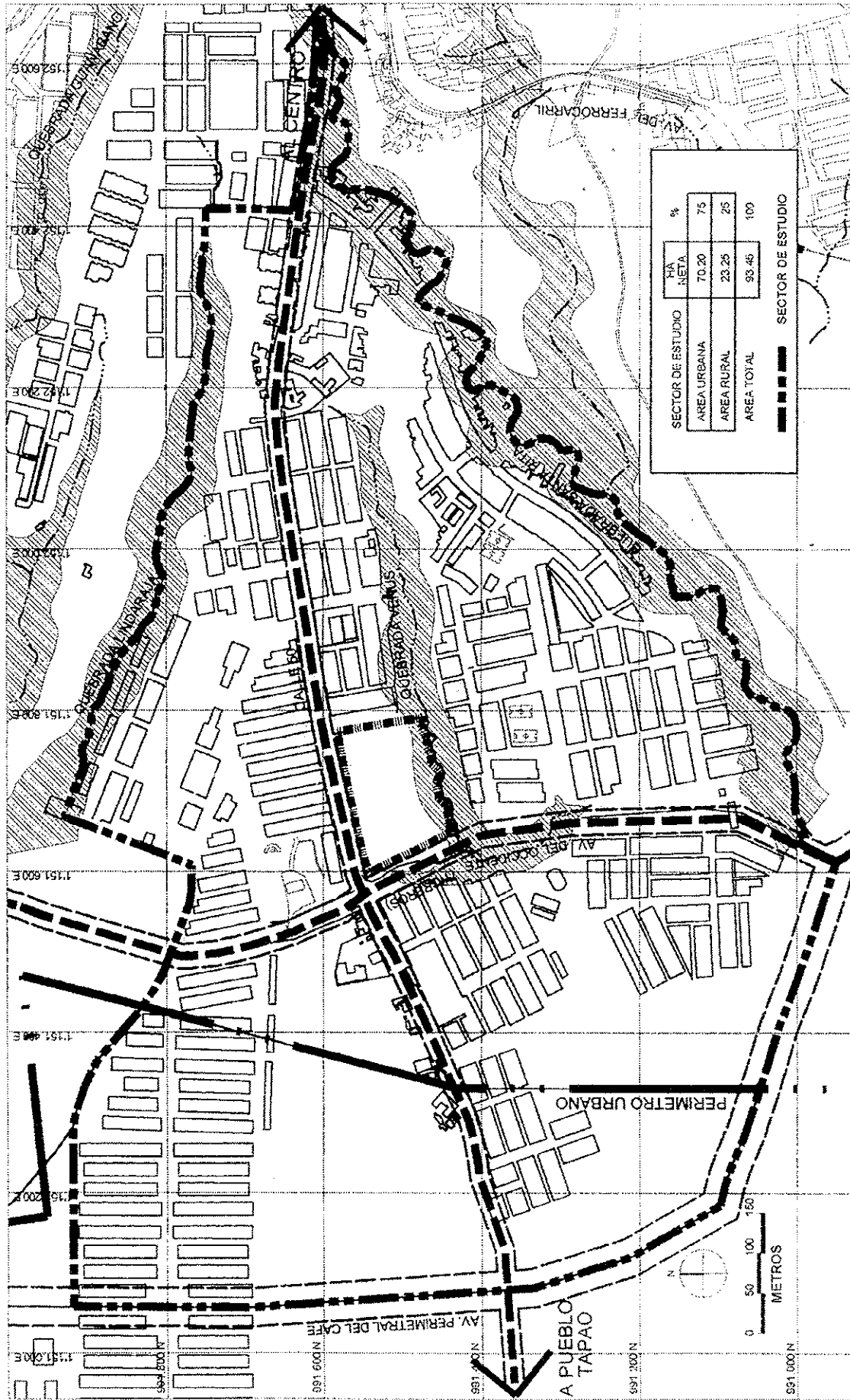
**LOTE - LINDARAJA - SECTOR**

Figura 3.2. El sector  
Figure 3.2. The sector



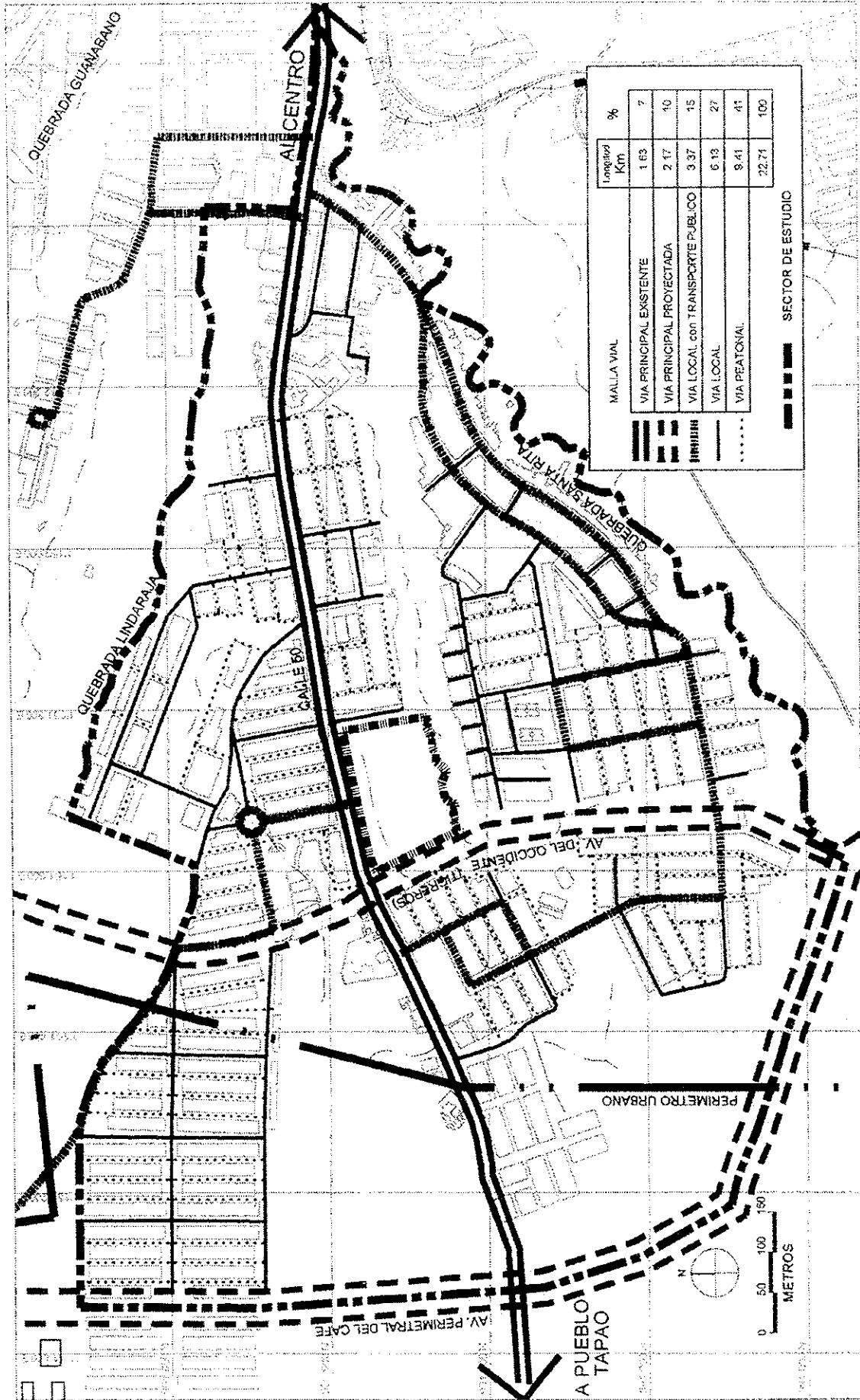
LOTE - LINDARAJA - SECTOR

Figure 3.3. Lindaraja Sector



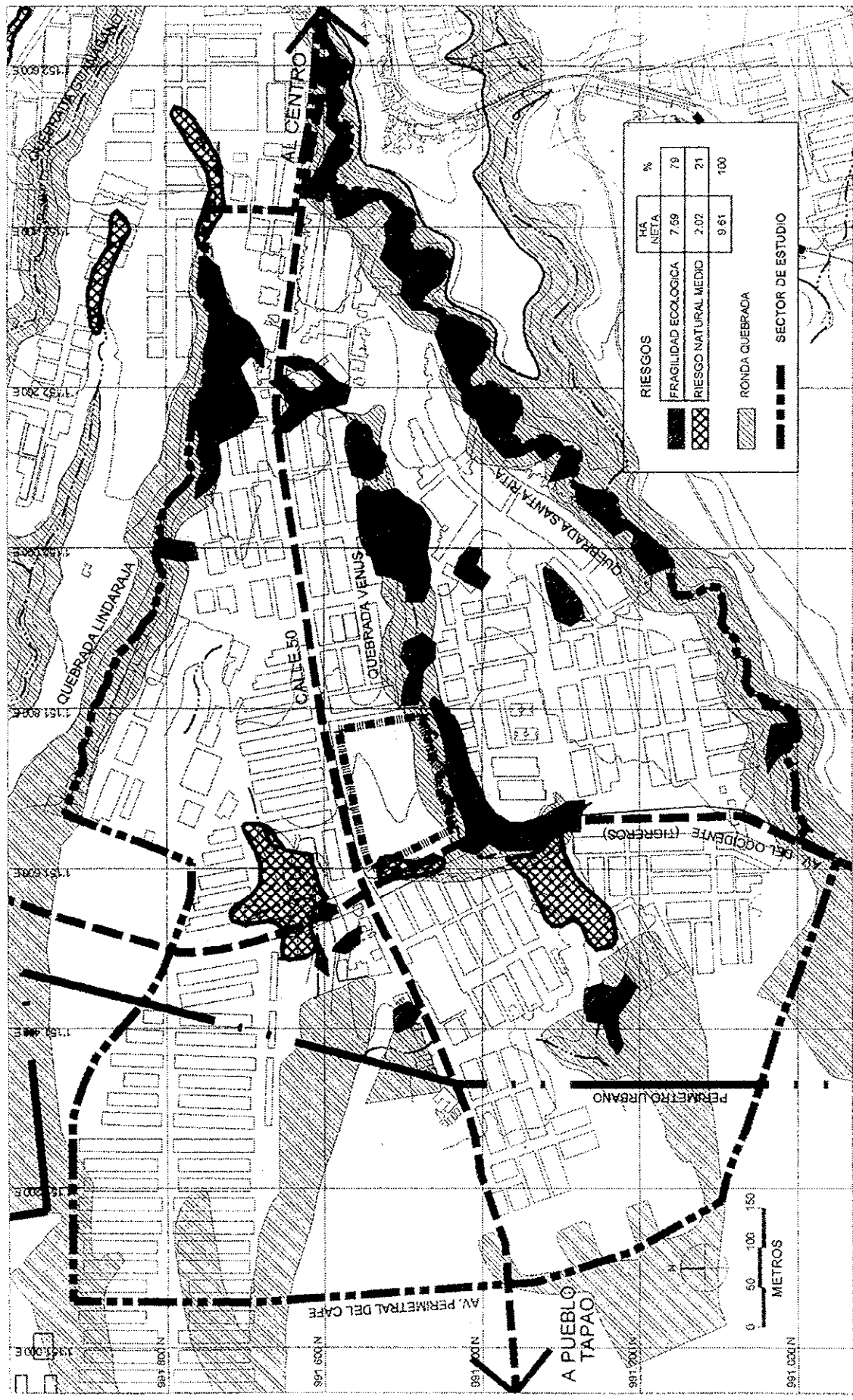
# LOTE - LINDARAJA - SECTOR

Figura 3.2.1. El sector  
Figure 3.2.1. The sector



# LOTE - LINDARAJA - SECTOR MALLA VIAL

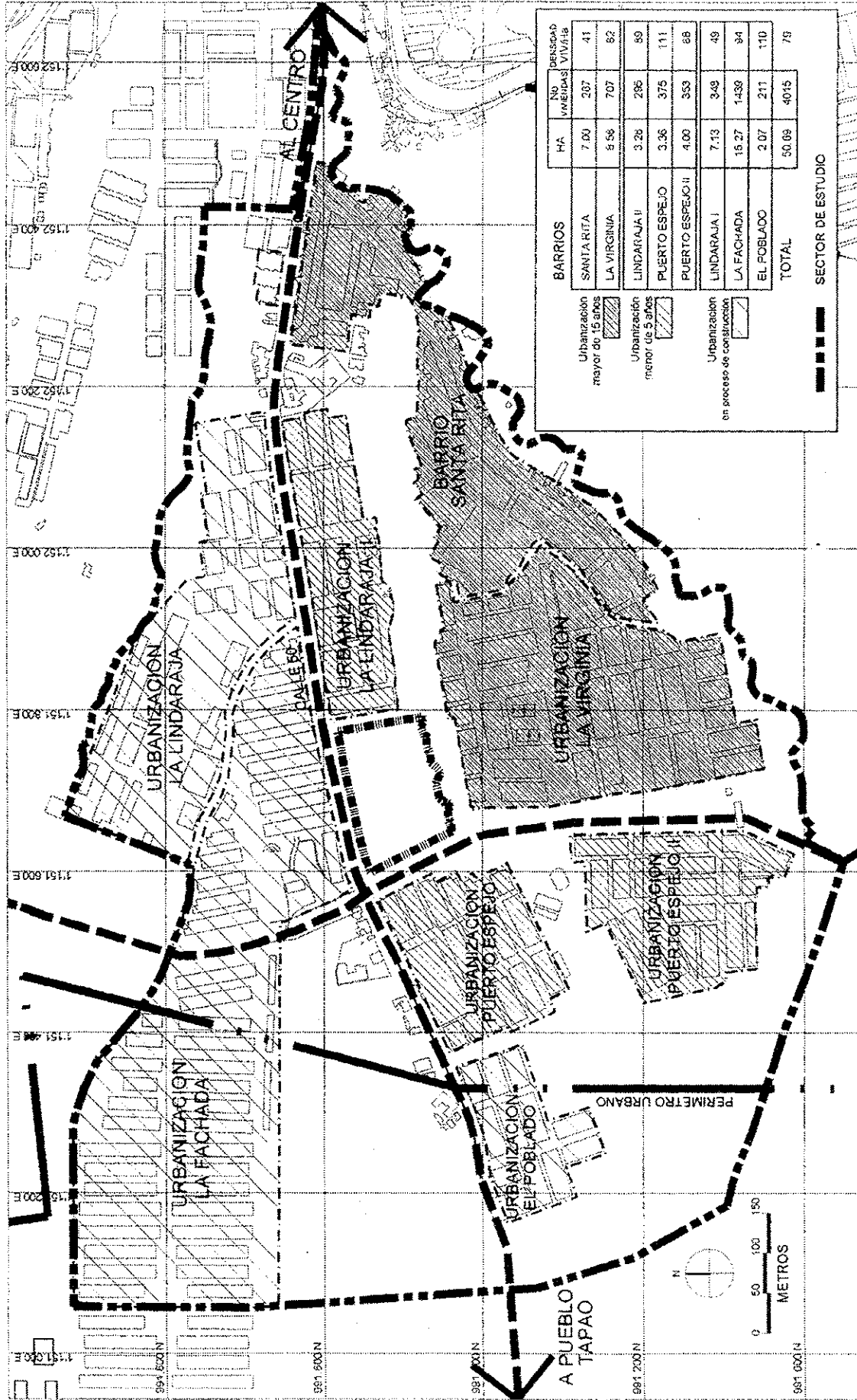
Figura 3.2.2. El sector - Malla vial  
Figure 3.2.2. The sector - Street Grid



**LOTE - LINDARAJA - SECTOR  
MALLA AMBIENTAL**

Figura 3.2.3. El sector - Malla ambiental  
Figure 3.2.3. The sector - Environmental Grid





# LOTE - LINDARAJA - SECTOR

## MALLA VIVIENDA

Figura 3.2.5. El sector - Malla Vivienda  
 Figure 3.2.5. The sector - Housing Grid

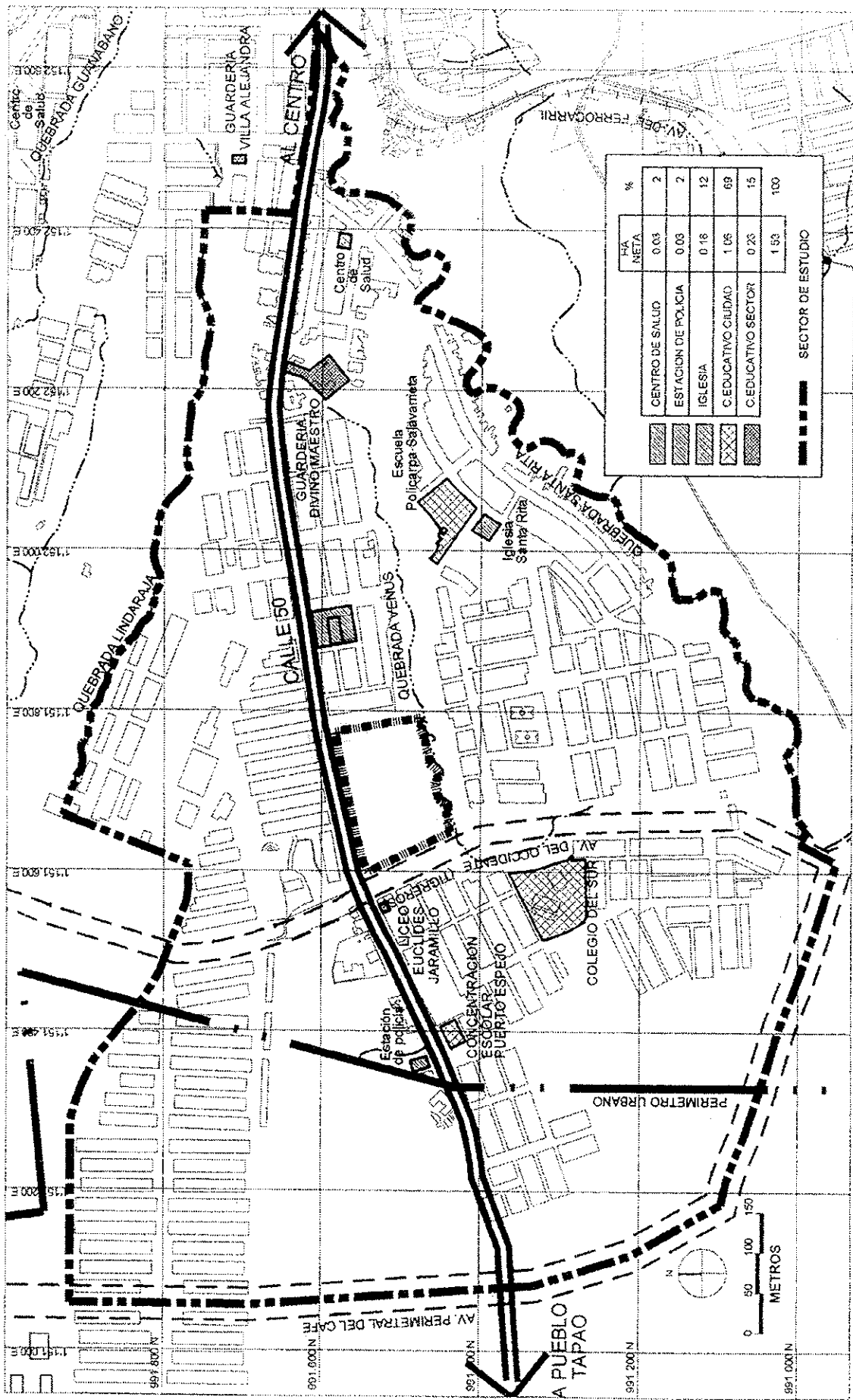


Figura 3.2.6. El sector - Malla de Equipamiento Comunitario  
 Figure 3.2.6. The sector - Community Facilities Network



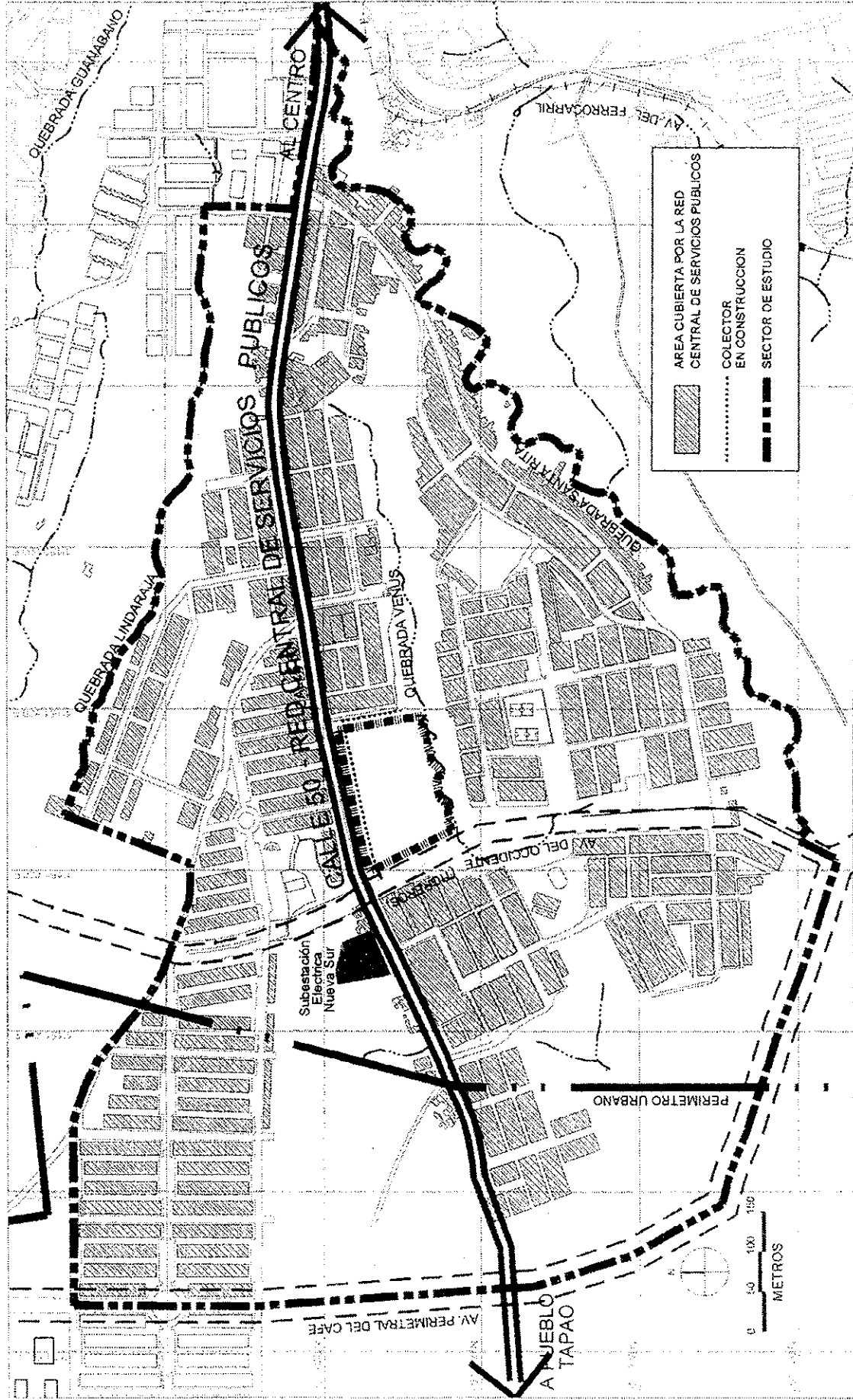


Figura 3.2.7. El sector - Malla de Servicios Públicos  
 Figure 3.2.7. The sector - Public Services Grid

# LOTE - LINDARAJA - SECTOR MALLA DE SERVICIOS PUBLICOS

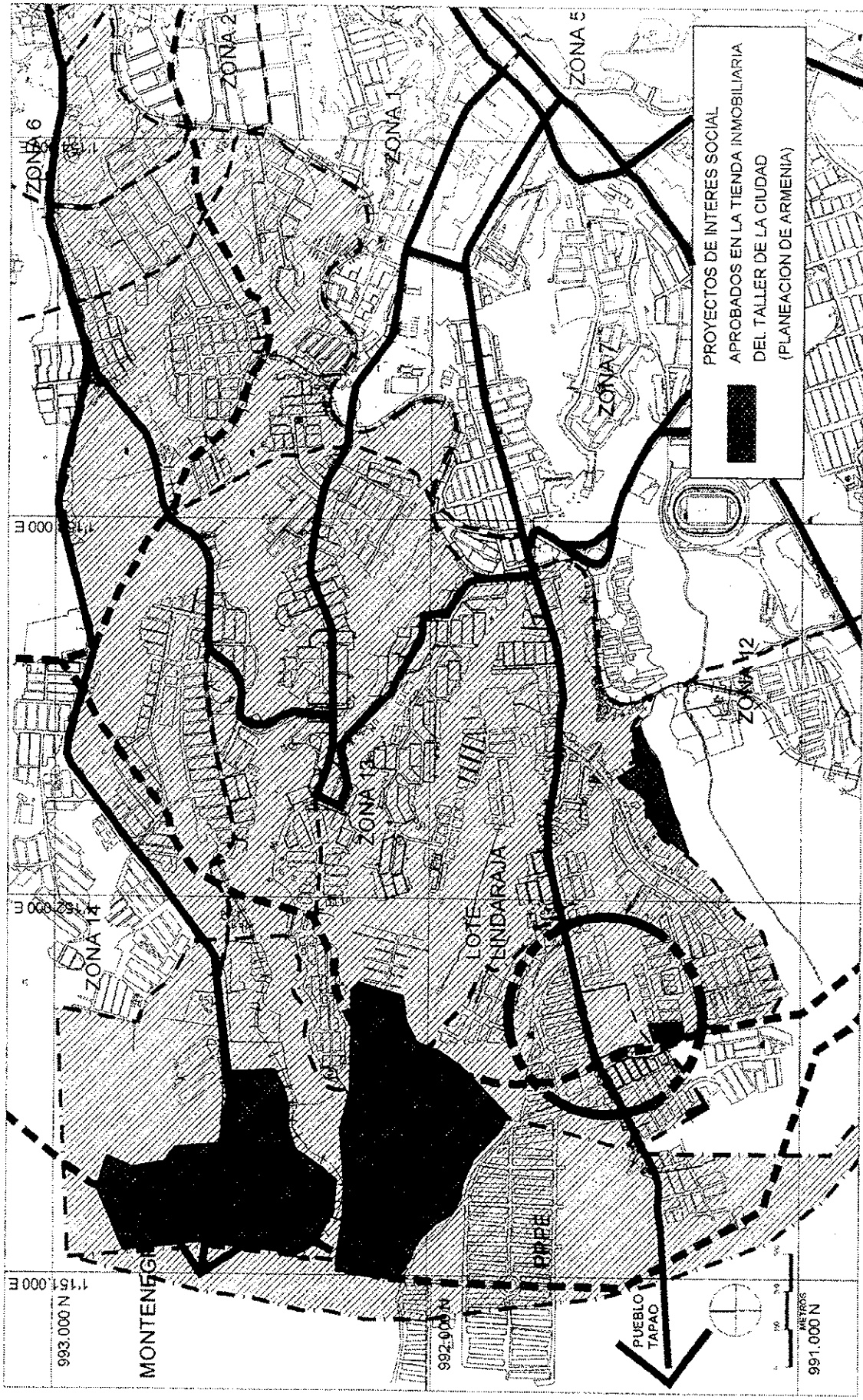


Figura 3.3. La zona. Proyectos de Interes Social

Figure 3.3. The Zone.

AGENCIA DE COOPERACION INTERNACIONAL DEL JAPON  
 PASO No.2: EL ESTUDIO -Preparación del plan  
 STEP No.2: THE STUDY -Preparation of the plan

MARID NORIEGA & ASOCIADOS LTDA. - GOEBERTUS ESTRADA S en C  
 URBANISTAS

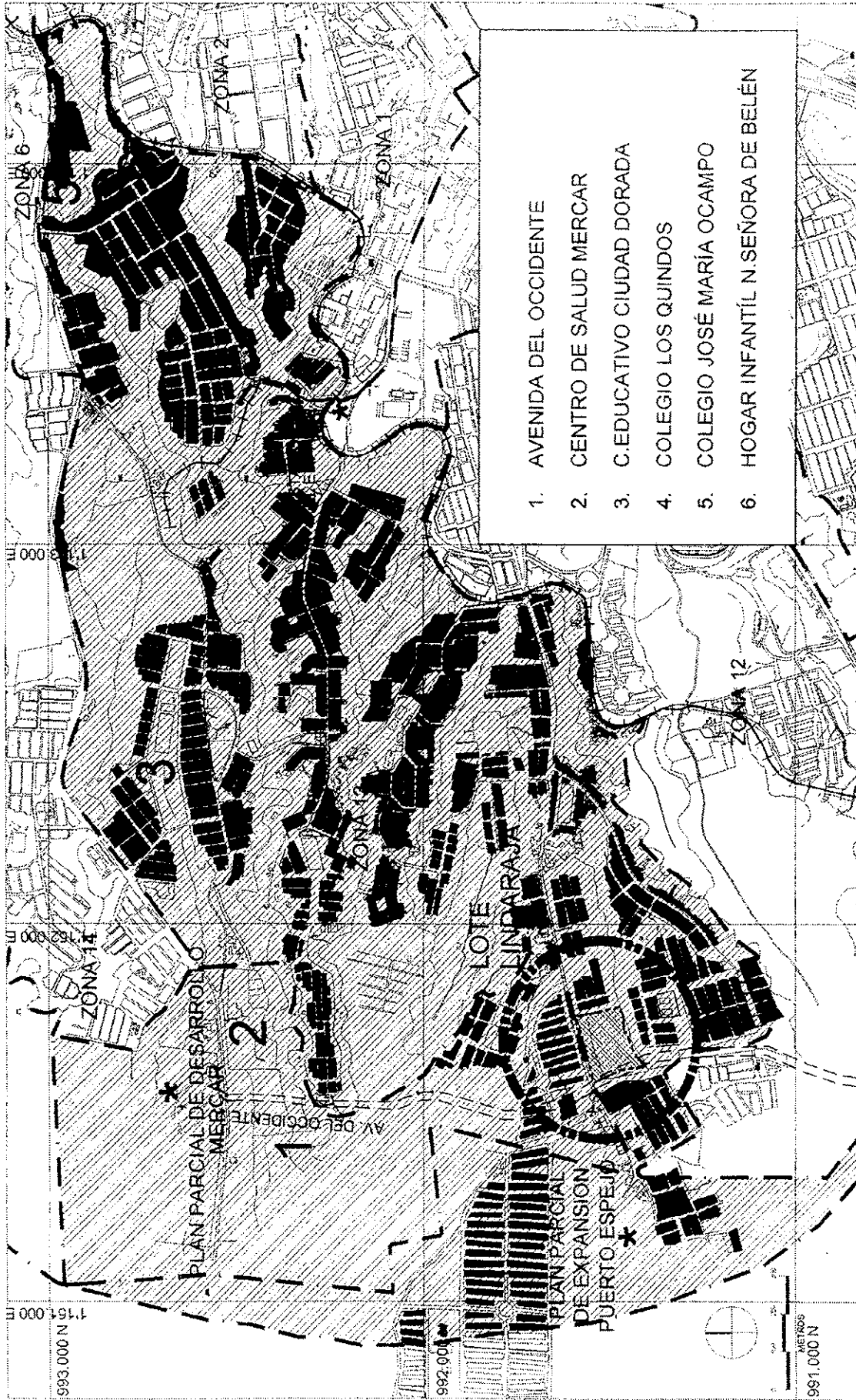


Figura 3.3.3. La zona. El plan de acción zonal(PAZ) -PROYECTOS U.NACIONAL-  
 Figure 3.3.3. The Zone. (PAZ)

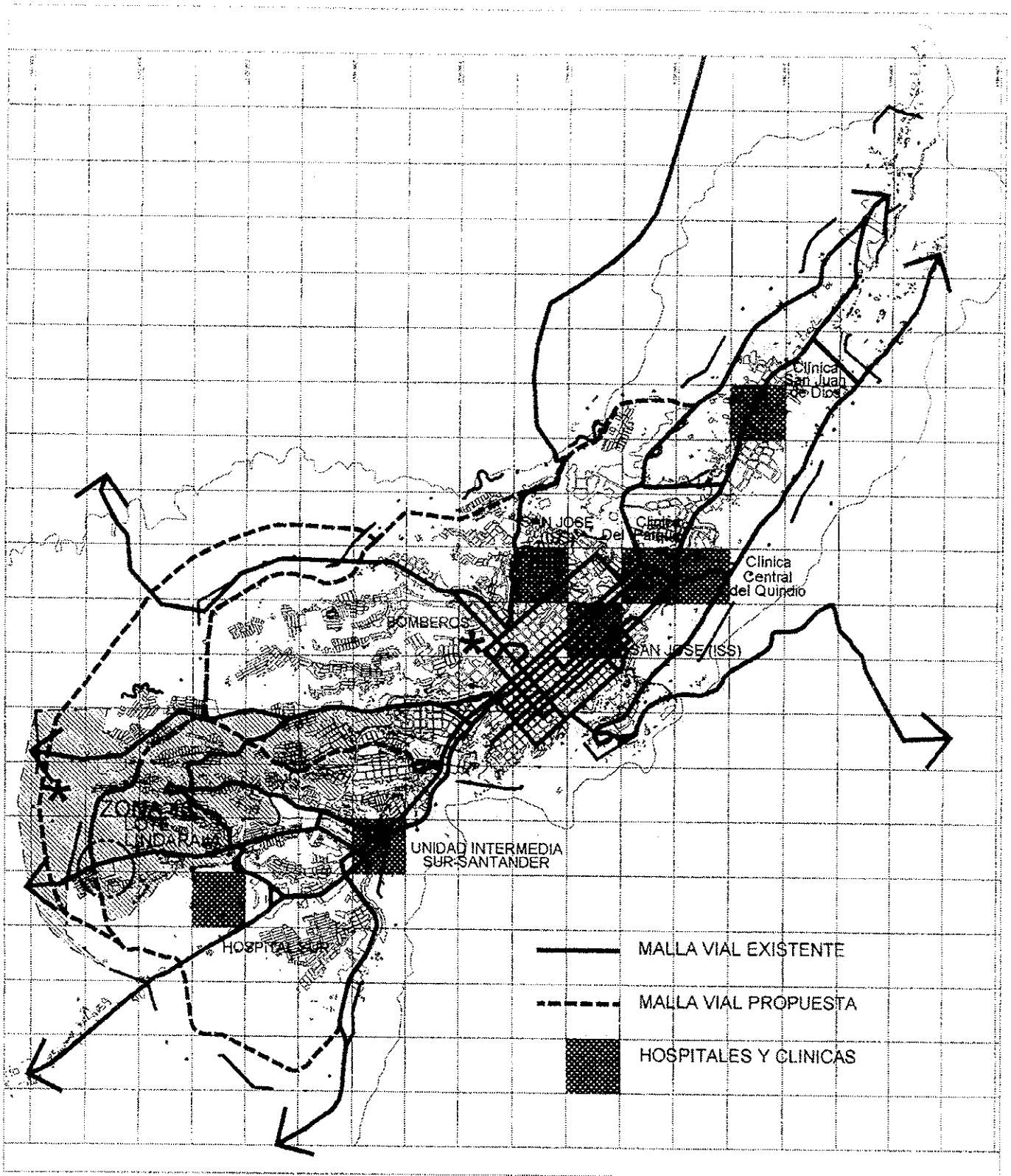


Figura 3.4. La ciudad. Manejo de emergencias. Instalaciones y organización (Hospitales)  
 Figure 3.4. The city. Emergency support system.

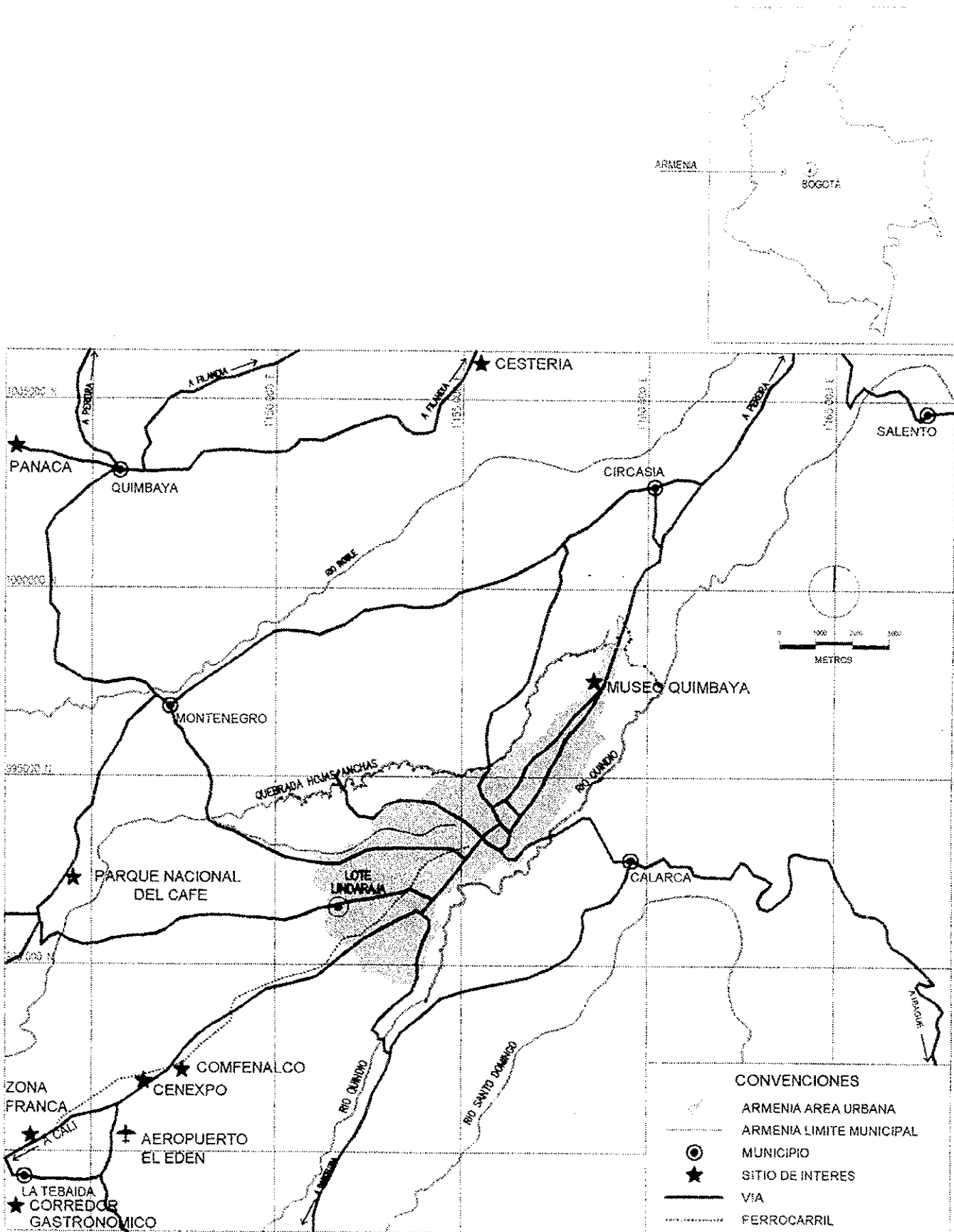


Figura 3.5. Relación del lote con la región / Figure 3.5. The Region.

JICA

PASO No.2: EL ESTUDIO -Preparación del plan  
STEP No.2: THE STUDY -Preparation of the plan-

MARIO NORIEGA & ASOCIADOS LTDA. - GOEBERTUS ESTRADA S en C  
U. TEMPORAL



## **4. PLAN – MAKING.**

### **4.1. The Executive Unit.**

#### **4.1.1. Participants and Organization.**

The Office of the Mayor of Armenia has delegated responsibility for the program of development of the “**Village of Life and Work**” Project to the Office of Competitiveness and Economic Development. The Municipal Fund for Housing will be responsible for the technical development and for the construction of housings with the subsidies granted by *FOREC*. *COFAMA* will be in charge of the spending of funds given by *FOREC* for infrastructure and workshops.

#### **4.1.2. Funds / Subsidies.**

- The Municipality of Armenia, provided Col\$300 million for the purchase of the site.
- *FOREC*, provided Col\$820 million of funds from the Reconstruction Program for the development of infrastructure and production facilities. It will also provide housing subsidies (Col\$5.9 million per family) for those who qualify for them.
- *COMFAMA*. This is a co-operative in the Department of Antioquia, formed as an NGO which manages Zone 15, to which the Project was initially allocated. This entity is responsible for the administration of the Col\$820 million provided by *FOREC*. These funds were included in the description of Projects for the Zone Action Plan PAZ, Line 7.3-program for economic re-activation, construction of “**The Village of Life and Work**” - presented by this NGO to *FOREC*.
- *INURBE* is the Social Housing and Urban Reform Agency which administers housing subsidy funds nationwide. This entity supports the Executive Unit in the process of selection of beneficiaries, and is subject to review by national-level directorates. Families without access to the *FOREC* subsidy will have the possibility of access to *INURBE* subsidies. The *INURBE* subsidies, in accordance with current regulations, amount to Col\$6.5 million per family.
- Quimbaya Law. This law recently approved by Congress (July 2000), increases in Col\$4 millions the housing subsidy that can receive families affected by the earthquake. In the forms which the Executive Unit presented to *FOREC*, the total value of the Project (30 August 1999 and 22 September 1999) including studies and designs, was Col\$2.000 million.

### **4.2. Profile of Beneficiaries.**

The Office of Competitiveness and Economic Development has chosen already 96 families, and started processing paper work to grant them subsidies provided by *FOREC* and *INURBE*. This list was given to JICA on 2 October 2000. The list corresponds to a revision and selection of a prior list with 167 families that signed to participate in the Project, and fulfilled preliminary requirements. The social and economic analyses that were provided by JICA in reports of the Project were based on the preliminary listing of the 167 families and its posterior changes. The following is the profile of beneficiaries, based on already processed information and some adjustments in the new list. Still, complete data of all pre-selected candidates (such as monthly income, for instance) is not available yet. For this reason, some numbers are based on estimates and projections that use partial information or previous analyses.

#### **4.2.1. Process of Selection of Beneficiaries.**

The process of selection of beneficiaries is directly done by the Executive Unit with *INURBE*'s support.

The most recent listing shows the following distribution of beneficiaries, according to their origin

(i.e., the association to which they belong) and the type of activity they are involved in.

**Table 4.2.1. Participation According to Type of Association.**

Type of Association	Types of activities						Total	%
	1	2	3	4	5	6		
LA BOMBONERA LODGING (2)	2				21		23	24
ARTISANS OF QUINDIO	5	5	1	2		6	19	20
ART CITADEL	2	1				6	9	9
CORPICUEROS			11				11	11
FUMUCA	3			5	2	3	13	14
INDEPENDENT	8	2	5	1	0	4	20	21
YOUNGSTERS 2000				1			1	1
Total	20	8	17	9	23	19	96	100
Percentage	21	8	18	9	24	20		100

(1): 1. Woods, 2. Molding /Ceramics, 3. Leather /Shoes, 4 Embroidery/ Garment design, 5. Services/ Other, and 6. Artists/Handicrafts.

(2): COFAMA requested that the inhabitants of "La Bombonera" be included in the Project. This temporary lodging is located in the sector of this NGO's management.

SOURCE : Office of Competitiveness and Economic Development.

#### 4.2.2. Selection Criteria.

The Office of Competitiveness and Economic Development established the following criteria for the identification and selection of beneficiaries:

- At least one member of each of the households benefiting must be engaged in some craft activity, small-business, manufacturing activity or artistic work.
- The household must qualify for a subsidy from FOREC, FOCAFE or INURBE, and must have the necessary capacity for indebtedness to have access to a subsidized loan for social interest housing.
- No member of the household may be the owner of a house. Candidates must be tenants, illegal settlers, or families who lost their houses in the earthquake, and this must be shown by a certificate issued by a the appropriate management unit, or a certification of non-possession of housing issued by the land registration office IGAC. Further, new beneficiaries may not have received subsidies previously.

The Office of Competitiveness and Economic Development has also specified possible occupations which beneficiaries of the Project should have:

##### a) In Manufacture:

- Wood and furniture (including work in bamboo).
- Molding in different materials (clay, wax, stone, gypsum, and other ductile materials).
- Leather and shoe-making.
- Embroidery and garment-making.
- Work in the visual arts and manual crafts (different techniques of painting, metal-work, household decoration, etc.).

##### b) In Services:

- The agricultural and food sector (conserves, special food, bakery, etc.).
- The selection of candidates would favor those showing the longest period of experience in their activities.

#### 4.2.3. Social, Economic and Labor Characterization of Applicants/ Professions, Income and Family Structure.

- In average, there are four persons per family, two of which would be children.
- The expected population reaches 368 people. 52% are adults and 48% are children.



- Among the select candidates, there are approximately 68 children that would use the day care center<sup>1</sup>; this is 42% of the child population. The other 100 children would go to primary school.

The following data was found in relation to activities of men and women who are 18 or more years old:

**Table 4.2.3.(1). Social and economic condition of beneficiaries**

Occupation	%
Artisans	47%
Employees	19%
Housemaids	11%
Independent workers (other jobs)	4%
Unemployed	5%
Students	11%
TOTAL	100%

The following are the results of a survey conducted among 36 families:

**Table 4.2.3.(2). Present Workshops According to Type of Activity.**

Activities	Present number of workshops <sup>2</sup>	Average Area / Individual (m <sup>2</sup> )
Wood	7	25.2m <sup>2</sup>
Molding / Ceramics	7	11.7m <sup>2</sup>
Leather / Shoes	11	18.5m <sup>2</sup>
Embroidery / Garment Design	1	9.0m <sup>2</sup>
Services / Other	0	3.5m <sup>2</sup> <sup>3</sup>
Artists / Handicrafts	10	12.3m <sup>2</sup>
<b>Total</b>	<b>36</b>	

Source: Field Work Temporary Partnership.

**Table 4.2.3 (3). Specialties of 72 Craft-persons selected for the Project.**

Specialty	Subspecialty	Number
<b>Wood</b>	Carpentry	2
	Cabinet-making	3
	Bamboo	2
	Musical Instruments	3
	Furniture	7
	Wood (unspecified)	5
	<b>Total wood</b>	<b>20</b>
<b>Leather</b>	Bags	2
	Shoes	8
	Leather-work	3
	Other (unspecified)	4
	<b>Total leather</b>	<b>17</b>
<b>Ceramics</b>	Clay	1
	Ceramics (unspecified)	7
	<b>Total ceramics</b>	<b>8</b>
<b>Paintings</b>	Oil colors	1
	In ceramics	2
	Miniatures	1
	Relief	1

<sup>1</sup> These children ranged between 3 months old and up to 5 years old.

<sup>2</sup> From all the 96 pre-selected artisans, nearly 40% of families were surveyed. From these 38,5 families, 30 affirmed having a workshop.

<sup>3</sup> By observing "La Bombonera" temporary lodging.

	Other (unspecified)	1
	<b>Total painting</b>	<b>6</b>
<b>Embroidery and Garment Design</b>	Clothing	5
	Artistic embroidery	4
	<b>Total embroidery</b>	<b>9</b>
<b>Others</b>	Wax	1
	Jewelry	5
	Master of plastic arts	1
	Metal working	1
	Dolls	2
	Stone carving	1
	Cards	1
	<b>Total other</b>	<b>12</b>

Source: Office of Competitiveness and Economic Development

- **Purchasing power of participants.** The Office of Competitiveness and Economic Development surveyed people interested in the Project to find out data about their income and saving power. Most people interviewed declared no income. The average monthly income is Col.\$257,400.00.

**Table 4.2.3.(4).** Monthly income of pre-selected candidates

Range of Monthly Income	Number	% of Total
\$1 - \$100,000.	2	2%
\$100,001. - \$200,000.	14	14%
\$200,001. - \$300,000.	20	22%
\$300,001. - \$400,000.	10	10%
Over \$400,000.	8	8%
N/K	42	44%
<b>Total</b>	<b>96</b>	<b>100%</b>

Source: Office of Competitiveness and Economic Development

**Table 4.2.3.(5).** Monthly Savings of pre-selected candidates.

Range of Monthly Savings	Number	% of Total
\$1 - \$50,000.	23	24%
\$50,001. - \$100,000.	11	11%
\$100,001. - \$150,000.	7	7%
Over \$150,000.	5	5%
No capacity to save	51	53%
<b>Total</b>	<b>96</b>	<b>100%</b>

Source: Office of Competitiveness and Economic Development

**Table 4.2.3.(6).** Savings available from pre-selected candidates.

7.1.1.a.2.1.1 Range of Available Savings	Number	% of Total
\$1 - \$100,000.	7	7%
\$100,001. - \$200,000.	4	4%
\$200,001. - \$300,000.	3	3%
\$300,001. - \$400,000.	7	7%
Over \$400,000.	5	5%
No savings	70	74%
<b>Total</b>	<b>96</b>	<b>100%</b>

Source: Office of Competitiveness and Economic Development

#### 4.2.4. Productive Profile-Activities of the Prospective Recipients.

The productive profile of beneficiaries of the Project can be defined considering the following aspects:

a). **General Context for the Classification and Characteristics of Artisan Production.** Quindío's artisan production shares 2.07% of the total artisan output nationwide. 1219 artisans work in 627 workshops. Quindío's artisan population in the city and in the countryside is virtually even, with a slight predominance of women over men.

**Table 4.2.4.(1).** Distribution of artisans by specialty.

Activity	Number	% of Total
Non-crafts activities	373	30.6%
Wood	205	16.8%
Weaving	179	14.7%
Toys and games	128	10.5%
Leather	109	8.9%
Ceramics	76	6.2%
Metals	58	4.8%
Decorative objects	28	2.3%
Glass	19	1.6%
Screen and painting	17	1.4%
Natural items	9	0.7%
Clay pottery	8	0.7%
Intermediate techniques	6	0.5%
Stonework	4	0.3%
<b>Total</b>	<b>1,219</b>	<b>100.0%</b>

Source: National Crafts Census 1998.

As much as at a national level, the productive structure of craft-work in the Department of Quindío is in many ways rudimentary:

- 65.7% of workshops buy their raw materials in the city in which they work. Only 3.1% do so in other towns in the same department, and 16.3% in other departments. This information is significant considering the size of Quindío.
- 69.7% of workshops acquire their raw materials retail, which reduces the possibility of obtaining favorable prices. Only 24% purchase their materials wholesale.
- 90% of workshops acquire their raw material alone, without associating with others; and only 7.7% associate with others when making their purchases.
- 81.8% of workshops buy raw materials by cash; only 7.5% take credit. This information is relevant if we consider that 35.7% of heads of workshops say that the main problem with regard to raw materials is the lack of credit.
- 40% of the heads of workshops consider that the main problem regarding raw materials is scarcity, which means that the prices of materials tend to be high.
- Craft-work is essentially manual; in 34% of workshops all work is manual, and in 40%, all tools are manual.
- The low level of technology is reflected in the very low cost of acquisition of machines and tools.
- There is no productive chain: 92.5% of workshops produce finished products, and more than 80% of total craft production is sold directly to the final consumer.
- There is little organization of the selling activity: the husband or wife of the craft-worker and the craft-worker are the main mechanism for distributing a production in 97.8% of workshops; products are sold at the home of the producer (52.9%) or at the workshop itself (36%); only 20.5% of workshops sell part of their production outside the town in which they are located.
- Trades are learned in different ways, there being no predominant form of formation: some learn by their own initiative (28%), some as apprentices in a private workshop (28%), some by courses (28%), and others in the home workshop (14%).
- In at least 90% of workshops, employment is informal, which means that workers are not covered by the social security system.

- Very few craft-workers organize themselves in order to take part in fairs, or because the organization to which they belong offers them credit, or because it provides services in health, education, and recreation.
- Low sales and income: the monthly sales of the workshops, and the monthly income of the craft-workers are lower than Col.\$500,000.00 in 65% of surveyed people.

**b). Perspectives of the Recipient's Artisan Industries.** The development of the artisan industry in the Coffee-Growing Belt is closely linked to the possibility to turn the tourist industry into an alternative for social and economic development in the region.

Proposing artisan-production projects along with the growth of rural tourism can channel efforts and resources to reach a comprehensive and self-sustained development. The production of handicrafts has been supported by Handicrafts of Colombia, Inc. for approximately five years through Quindio's Design Laboratory, one of the two handicraft training centers of the country. This has highly improved the quality of the products made by the artisans of the region, and also opened possibilities of exports.

The Office of the Governor of Quindío has focused on this combined development of crafts and tourism as one of its strategies for the economic re-activation of the region. In pursuit of the development, it has been executing the "Bamboo" agreement through production development centers –known as C.D.P.'s– proposed for construction in six municipal districts with the support of Handicrafts of Colombia, Inc. (*Artesanías de Colombia S.A.*), *Corporación Autónoma Regional del Quindío*, the National Center for Technical Training *SENA*, Armenia's Chamber of Commerce, and the administrations of municipal mayors.

The creation of a solid tourism industry in the region requires business-people and departmental authorities to request technical assistance from central government. A response to this need was channeled through an agreement signed in 1992 between the governments of Spain and Colombia, which gave rise to the strategic development plan for rural tourism in the Coffee Belt.

At present, there is a strategic opportunity to plan a new model for tourism and economic development, associated with particular cultural aspects of the region, with an emphasis on craft-work with natural elements such as bamboo, wicker, leather, ceramics and wood, among other materials.

**c). Specific Characteristics of Beneficiaries' Productive Activity.** The information about the productive activity of beneficiaries has been adjusted with data from the last listing. These are the results:

- Legal status. 100% are natural persons and none of them have a working license.
- Fixed assets and break-even point. 100% of workshops had fixed assets lower than Col.\$120,000,000.00. This was the maximum sum given by DNP and the Ministry of Economic Development to classify the size of economic units in micro-businesses and, in average, three jobs per workshop.
- 50% of artisan units are above the break-even point (value of sales greater than total costs); 38% are in the break-even point (sales equal to costs), and 12% are below the break-even point (sales lower than total costs).
- Businesses' life-span. The youngest economic unit has 18 months old, and the oldest one has been running for 30 years. The average time of existence of businesses is 16 and a half years.
- Number of employees per salary and sex. The economic units of the survey drew a total of 32 employees, of which 53% are men and 47% are women. The minimum monthly wage is Col.\$70,000.00 and the highest salary is Col.\$700,000.00.

- It is estimated that the 77 artisan units generate 249 jobs, 47% of which offer an average salary of Col.\$390,000.00, followed by 18% which offer a salary below the present minimum wage rate. 19% offer between one and two minimum wages, and the remaining 16% earned a salary of Col.\$780,000.00 a month.
- 63% of jobs generated by the artisan workshops offer average salary levels that range between Col.\$390,000.00 and Col.\$780,000.00.
- Operative structure. The average area required to operate is 37.8m<sup>2</sup>. The minimum area is 4m<sup>2</sup> and the maximum area is 91m<sup>2</sup>.
- Expenses. The total salary expenditure was added to the cost of raw material, water, electricity, and rent. According to this, the minimum monthly expenditure was Col.\$280,000.00., and the maximum monthly expenditure was Col.\$8,250,000.00, with an average monthly expenditure of Col.\$2,250,000.00.
- In relation to monthly sales, 75% of the surveyed artisan workshops reported average monthly sales up to Col.\$1,622,230.00. The lowest sale was Col.\$150,000.00., and the biggest Col.\$4,500,000.00.
- Credits. 22% of surveyed units have credit with some entity. Monthly payment quotas range between Col.\$45,000.00 and Col.\$150,000.00.
- Main needs. The following table shows the recurrence of each of the needs that were declared. The percentage column is based on the total of needs mentioned.

**Table 4.2.2.(2). Main needs.**

NEED	FREQUENCY	%
Credit	6	26.1%
Machinery	5	21.8%
Space	3	13.0%
Commerce	3	13.0%
Training	2	8.7%
Other	4	17.4%
<b>TOTAL</b>	<b>23</b>	<b>100.0%</b>

Source: Fieldwork Temporary Partnership.

- The following table contains the types of training that artisans need.

**Table 4.2.4.(3). Types of training needed.**

TYPE OF TRAINING NEEDED	FREQUENCY	%
Handicraft jobs	7	35%
Administration	5	25%
Bookkeeping	3	15%
Marketing	3	15%
Other	2	10%
<b>Total</b>	<b>20</b>	<b>100%</b>

Source: Fieldwork Temporary Partnership

- Business-owners' plans. 55,6% of surveyed people wish to extend their businesses in the next five years. 33% plan to keep them the way they are now, and 12% want to provide new jobs.
- Conclusions. All these variables as a whole let us conclude that artisan workshops are informal. According to the classification of micro-businesses in Colombia (Ernesto Parra Escobar - 1978 *Microempresa y desarrollo*—Micro-Businesses and Development) 50% of artisan workshops just get by and have organizational and planning problems. Based on a preliminary analysis of costs, workshop rent per square meter can be Col.\$5,000.00. a month. This means that a workshop with an average size would cost Col.\$190,000.00 a month (38m<sup>2</sup>), and the smallest workshops would cost Col.\$20,000.00. (4m<sup>2</sup>).

### 4.3. Community Development and Natural Disaster Prevention Program.

#### 4.3.1. Natural Disaster Prevention Program.

The following factors help reduce the levels of exposure to natural disasters, environmental problems related to the society, and human threats: 1) the Project design, i.e., use of land, structural design, specifications of public utility networks; 2) provision of facilities and other spaces, i.e., a community room, emergency equipment, public areas; 3) preparation of the community, i.e., education and knowledge of the surroundings); 4) institutionalized organization of the community, providing the necessary resources and economic conditions.

#### a). Components of the NEIGHBORHOOD'S PREVENTION AND ACTION PLAN IN CASE OF DISASTERS:

- **Organization:** To organize the community, the plan is to create a NEIGHBORHOOD EMERGENCY COMMITTEE, supported by the Local Committee for Disaster Prevention and Attention, known as COLPAD. The creation of a Community Foundation has also been proposed. In times of normality—while no disasters occur—the members of the Foundation, i.e., the community itself, will promote collective and individual methods of production and marketing. The members will also be in charge of workshops and common areas. If a disaster should be faced, the community would receive, manage, and distribute donations, according to previously agreed ways of doing so.
- **Acquaintance with the surroundings:** The plan is primarily based on the community's recognition of THREATS in the surroundings and RISK EXPOSURE FACTORS. These include:
  - Identification of perilous areas and most safe areas in each house, in each workshop, and in the neighborhood in general.
  - Knowing, adopting, and applying rigorously the seismic-resistant construction principles especially when undertaking extensions on housing.
  - Knowing the natural characteristics of the natural surroundings, e.g., the neighboring stream or brook<sup>5</sup> as well as the whole region.
- **Knowledge of the community:** The plan must include a CENSUS, determining the structure of every household and providing information on the most vulnerable sectors of the population (older adults, children, persons with special physical needs, or developmentally challenged individuals).
- **Comprehensiveness:** This is to say, the Neighborhood Plan includes actions to PREVENT, LESSEN, and BE PREPARED FOR each of the threats that should be detected.
- **Knowledge and application of the plan:** The Plan must be well known by every member of the community. Consequently, all its members must participate in the design of the plan, posing their own perceptions and interests.
- **Plan's validity and renewal:** The Plan is periodically validated and renewed by performing SIMULACRUMS through which its strengths and weaknesses can be detected.
- **Training plan:** The Plan provides training to the following sectors:
  - Health Organizations: The plan includes improvement of former health conditions, environmental recovery, and development of better ways to respond to and come out of a menacing or difficult situation successfully.
  - Environmental promoters: Their job is to encourage and conduct an appropriate environmental management of the neighborhood, including, in particular, the neighboring brook and the inhabitants of both sides of its banks. The purpose is to facilitate the recovery of the stream, protecting it from a) direct effects such as landslides in case of a disaster, and b) indirect effects such as tree-cutting, garbage dumping, and illegal settlements on risk zones.

<sup>5</sup> The terms "stream" and "brook" are indistinctly used here, referring to the same geographical feature.

- Aides: Coordinated by COLPAD and First-Aid Organizations, people in the neighborhood will be trained as first-aid rescuers. They will learn basic strategies on evacuation, first aid, classification of victims, search and rescue of injured people, handling of bodies, fire control, and emergency communications. The purpose is to teach people to manage emergency situations in their own neighborhood by themselves, and then support COLPAD and its members in neighboring communities. This knowledge, however, is not applied only in case of emergencies. Instead, people become permanent promoters of preventive and assuaging measures.
- Comprehensive formation of leaders: The City Hall's Secretariat of Citizen Participation, the Zone Administration (National University), and FOREC will coordinate the formation of leaders among men and women of different ages). As a way to prevent or balance social threats due to violence, skills for **peaceful conflict resolution** will be developed.

**b). Incorporation into the Municipal Plan:** The Neighboring Plan is incorporated into the Municipal Plan of Prevention and Attention of Disasters.

For the following reasons, the way in which the "**Village of Life and Work**" is conceived of and will be built shall become a seed of order spread among the chaos that breaks out during an emergency:

- Productive, communal, and family constructions are less susceptible to experiencing damage as their design complies to earthquake-resistant specifications.
- There will be a relative autonomy in terms of availability of electricity, potable water, and adequate sanitation, to the point of being able to offer *some* support to the neighboring communities.
- The "Center of Coordination and Running of Disaster and Emergency Assistance" —the headquarters of Armenia's Unit of Emergency Operations— shall have space and logistical service to install a **support center or branch** for emergency communications in the Community Room.
- There will be open and indoor space as well as logistical support to create a **Center for assistance to and classification of injured people**. The center will also transfer the injured to hospitals.
- COLPAD will be in charge of a complementary storage place to keep emergency equipment (tents, sleeping bags, digging tools, first aid kits, etc.).
- An association (as opposed to persons individually) will receive, manage, and distribute external aid in case of a disaster.

**c). Activities that Should Be Done with COLPAD's Support as Part of the Neighborhood Plan:**

- Selection of different areas in the neighborhood (zoning) for:
  - Assistance, classification, and transfer of injured people.
  - Recognition or identification of bodies.
  - Setting up tents for families in the community.
- Adaptation of premises for community facilities such as:
  - Storage place for reception and distribution of donations.
  - Sanitation.
  - Shelters for most vulnerable population (older adults, children, persons with special physical needs or developmentally challenged individuals).
  - Indoor and outdoor sport and leisure facilities.
  - Unit of Emergency Operations Branch.
- Census and permanent upgrading procedure through health organizations, SISBEN, or both.
- Demarcation of evacuation walkways.
- Control of information to the public.

- Analysis of the neighborhood's precariousness based on threats and risk exposure factors in the zone of influence.
- Measures to guarantee safety for the neighborhood and its inhabitants in case of emergency.
- Evaluation of the risks that arise in case of a disaster as a result of the neighborhood's privileged standing.
- Identification of individuals with main and secondary responsibilities for the activities of the Neighboring Plan.
- Training plans.
- Simulacrum and permanent procedures to upgrade the Plan.
- Methods to control listed tools and equipment that should be kept permanently in the neighborhood's storage place to be used in emergencies.
- Designation of people responsible for the permanent monitoring of threats and risk exposure factors.
- Establishing a system to control housing extension procedures and guarantee that these extensions are done following strictly the principles of seismic-resistant construction.

**d). Hypothetical Cases of Disaster.** In order to define ways of organization, responsibilities, inventory of resources and reaction measures, two hypothetical cases of disaster are posed based on possible degrees of seismic intensity.

- **Case 1.** The first case presupposes an earthquake with lesser intensity than that of the tremor taken as a base for the design and physical development of the Project. Therefore, it would not cause major damages to the Project itself, but it would make moderate and even severe damages in the area. In this case, the neighborhood plan must be executed to verify immediately the conditions of the site and transform the neighborhood into a temporary "park of emergency assistance and support" in the sector.
- **Case 2.** The second case presupposes an earthquake with similar or greater degree of intensity than that of the tremor taken as a base for the design. That earthquake would also cause notorious damages to the Project and it would spark emergency operations to assist the neighborhood community and people in other areas of the region. Keeping in mind that during the earthquake on 25 January 1999, 18,000 people became victims in the zone and 3,800 housing units were damaged, a situation with similar characteristics and figures could be experienced again as equivalent to the first case. Since, in addition, a significant number of settlements in the sector is under risk in case of a very severe tremor-equivalent to that of the second case—a greater number of victims is expected due to general damages to housing units and possible landslides in various sectors of the area. In this case (2), community premises and facilities are designed with higher earthquake-resistant structural specifications than those for housing. Also, sufficient wide public spaces are adapted for assistance and temporary shelter with easy access for cars and pedestrians. In this case, all aspects regarding public utility services, emergency equipment and training to the community, should be activated.

#### **4.3.2. Program for Community Activities.**

**a). Organization.** The Project requires:

- Proper administration of co-owned housing areas. It includes control and maintenance of private and communal areas.
- Proper administration of co-owned areas for workshops, commerce, and square for events. It is related to the management, maintenance, and control of areas whose use would be reserved for productive activities.
- Proper management of community premises. There must be a schedule for the use and maintenance of the Community Room. The Day Care Center also needs to be managed and maintained in pristine shape.
- Proper administration of Venus Stream Park. Maintenance, security, and use of it must be



enforced.

- Organization for the development of businesses. It comprises training, reception of credit and equipment, marketing and sales strategies applied to the various activities that would be developed in the Project. This issue should be considered in great detail, according to needs and types of activities.
- Organization in readiness to and prevention and amelioration of disasters.

#### **b). Operation, Conservation, and System of Finances and Funds.**

In the development of the Project, three significant phases must be distinguished. During the first phase, the basic construction is done. It comprises the first stages of housing, the community facilities, workshops, and public spaces (squares and parks). In the second phase, these facilities begin operating, necessary equipment and furnishings are chosen, and the community is formally organized. The third phase is focused on 1) keeping in good shape the basic works built in the first phase, and 2) the second phase construction (expansion) of each house.

- **First phase.** The development of the basic construction Project depends upon the budget available at present. Such budget includes the amount of subsidies and the credits granted to recipients in addition to subsidies. The resources available in this case are:

Cost of the lot	Col.\$300,000,000.00
FOREC's contribution	Col.\$820,000,000.00
Individual subsidies per recipient	Col.\$703,400,000.00 <sup>6</sup>
Additional funds through credit	Col.\$519,800,000.00 <sup>7</sup>

The Project is designed based on this amount as a point of reference.

- **Second Phase.** The amount of funds to carry out this phase of the Project depends on 1) the final selection of beneficiaries, and 2) the specific needs of each productive activity. Whether it gathers as a whole or by groups according to activities (leather work, woodwork, pottery, etc.), the community must reach an agreement to determine the final amount. The Colombian Institute of Family Welfare (ICBF) and the Local Committee for Disaster Prevention and Assistance must participate in the running of the Community Hall and the Day-Care Center.
- **Third Phase.** Each housing's extension will be determined by its recipient according to 1) his or her capacity to pay back the credit that he or she needed to become a property owner, 2) the rent paid to co-owners for the workshop area that he or she may utilize, 3) cost of public utility services, and 4) administration quota.

For maintenance of basic construction, differences among costs of housing areas (i.e., Venus Stream Park, streets of access and common areas), possibly paid by administration quotas, should be considered. Maintenance of workshops, square of events, and other community areas (which make up most of the Project) should be paid with funds derived from the rent of workshops.

#### **4.3.3. Organization for Sustainability of the Community.**

##### **a). Sustainability Objectives:**

- **Maintenance of Basic Construction.** As a result of sufficient acquisition of funds, as well as community awareness, sense of belonging, and commitment to creating participating committees, public spaces, sidewalks, squares, trees, urban furnishings (street lights, benches, garbage cans, etc.) should be kept in good shape and clean at all times.

<sup>6</sup> It corresponds to 31 subsidies by FOREC for Col.\$9,900,000.00 per beneficiary (Col\$5,900,00.00 of the current subsidy by FOREC, plus Col.\$4,000,000.00 of resources from Quimbaya Law); plus 61 subsidies by INURBE for Col.\$6,500,000.00 per beneficiary.

<sup>7</sup> Corresponds to a contribution of Col.\$5,650,000.00 per beneficiary. This is the credit that can be obtained with an average monthly family income of Col.\$270,000.00 in monthly quotas of Col.\$80,000.00.

- **Management of Facilities.** The Community Hall requires a permanent group of people in charge of 1) its maintenance, 2) event programming, and 3) fund raising from municipal, national, and private entities for training, and equipment. The running and furnishing of the Day-Care Center depends upon the collaboration of municipal and national entities, such as the Colombian Institute of Family Welfare (ICBF), with the community.
- **Performance of Productive Activities.** It depends on the selection of beneficiaries and their ability to organize themselves in order to receive training, credit, and promotions. It also depends on the creation of associations that would keep the Project alive in the long run.

**b). Economic Factors that Determine the Community's Sustainability.**

The analysis of 77 artisan workshops belonging to eligible candidates who complied with the Office of Competitiveness and Development's requirements to participate in the Project draw the following results about possible income by renting workshop areas.

**Table 4.3.3. Types of Workshops – Projected requirements of area.**

Activity	No. of Workshops	Area per workshop (m <sup>2</sup> )	Total m <sup>2</sup>
1- WOODS	21	25	525.00m <sup>2</sup>
2- MOLDING/CERAMICS	9	12	108.00m <sup>2</sup>
3- LEATHER / SHOES	14	14	196.00m <sup>2</sup>
4- EMBROIDERY/GARMENT DESIGN	9	9	81.00m <sup>2</sup>
5- VARIOUS SERVICES	25	4	100.00m <sup>2</sup>
6- ARTISTS/ HANDICRAFTS	14	12	168.00m <sup>2</sup>
<b>TOTAL</b>	<b>92</b>		<b>1,178.00m<sup>2</sup></b>

Note: these estimates are based on a survey done with 77 selected beneficiaries.

The built area of workshops, business stores, and zone for toilettes is 1,160.15m<sup>2</sup>. Over this area, the community itself has to establish a price for rent that would allow maintenance and, ideally, some investment for the improvement of the facilities. If the same Col.\$5,000.00 average square meter rent cost that beneficiaries are paying today is adopted, the community's monthly income would add up to Col.\$5,000,000.00.<sup>8</sup>

**4.4. Policies on Housing and Artisan Activities.**

**4.4.1. Housing.**

Housing must meet density range of 60 to 115 houses per hectare established by PORTE. The cost must be within the range for Lower and Middle Income Housing established by the Government of Colombia, trying not to be greater than Col.\$15,000,000.00. At least 70% of the value of each house must be paid with the minimum subsidy that FOREC grants to renters (Col.\$5,900,000.00) plus the subsidy established by Quindío's Law (Col.\$4,000,000.00). This lets the required credit (Col.\$5,650,000.00) to be paid with Col.\$80,000.00 monthly quotas. Housing structures must meet the standards of the earthquake-resistance national code. The construction must be built in stages. The total built area must include a social area and three bedrooms. From its very first phase, the Project must define the urban profile of streets and public spaces. The Project also has to include recreational areas and vegetation according to the characteristics of the site and its proximity to Venus Stream which ought to be treated and incorporated into the plan as a park.

**4.4.2. Workshops.**

Workshops must be separately located from housing units so that the former can be adapted to the space needs that recipients should need. This measure would also guarantee safety and

<sup>8</sup> This sum is the result of multiplying Co.\$5,000.00 per 1,000m<sup>2</sup>, the 90% of constructed area. The remaining area (10%) corresponds to ways of access, circulation and sanitary services.

comfort. Workshops must be flexible in the sense that they could be arranged or subdivided according to the conditions that each activity requires. Pedestrian and vehicular access must be easy, and workshops must be integrated into the public areas with greater visibility.

#### **4.4.3. Community Facilities and Community and Public Spaces.**

These facilities must meet the necessities of the community regarding events, gatherings, meetings, and training. But most of all, the premises must be easily adapted to case of emergency in order to assist the Project's population and other residents of the area. The Day-Care Center should have capacity to assist approximately 20% of the population. Such percentage corresponds to approximately 70 children, younger than 5 years of age, according to statistics provided by temporary shelters.

#### **4.5. The Study and Selection of Alternatives.**

The process of study and selection of alternatives had begun before the Municipality of Armenia chose the site of the Project. Given the difficulties for buying the site, three hypothetical scenarios based on the real components of the Project were applied to a theoretical piece of land. This terrain had similar characteristics to those of the properties the Municipality considered buying. The Steering Committee and various artisan associations participated in the assessment of such scenarios.

The intention was to keep going forward in the decision-making process regarding the organization of the Project's urban design and the architectural characteristics of each of its components, such as size, type of sites for housing, housing design, individual and community workshops, community equipment, stages of construction, the allocation of available funds to each of the aspects of the Project.

##### **4.5.1. General Matrix for the Configuration of Alternative Scenarios.** Figure 4.5.1.

The configuration of each scenario is illustrated in the attached matrix. It shows its three components, their alternatives of organization, and the way they are combined. In addition, the matrix includes a proposal to deal with disaster prevention and assistance in each of the scenarios.

- **Scenario 1.** This scenario was based upon the drastic difference between a housing zone and another zone for workshops and productive activities. The neighborhood is made up of 162 housing units with their respective community services. This number of houses was proposed in order to explore the site's capacity to concentrate in one sole sector all productive activities and heavy use of housing. The density ratio complies to PORTE's specifications. Workshops are not part of the houses. Productive activities are focused only in one part of the site, with a space for community workshops and a square for commerce and events. The community workshop is built over a 600 square meter area. This area can be eventually tripled in further stages of the Project, given the vast area of the square.
- **Scenario 2.** Three groups are organized in this scenario. Each of these groups contains housing units with individual workshops and one community workshop. The lots for the houses are divided in two parts, each facing a front. One of the fronts is located over a walkway. The house is built on this side of the walkway over a private piece of land with 3.60 meters wide in the front and 10.80 meters deep (the same measures used in scenario 1). The other side, over which the individual workshop is built, is a lot owned by the community or given to the owner of the house under a contract of loan and restitution. This side is located over a road with parking spaces for visitors, residents, and loading and unloading activities.
- **Scenario 3.** This scenario is only made of housing units with workshops inside each of them and the same community equipment used in the two other scenarios. The urban design is organized as a commercial and productive neighborhood, with a main road that ends up in a

food station square. There are parking spaces for residents, visitors, and loading and unloading activities in certain strategic places of the site. In this scenario there are not community workshops.

**4.5.2. Evaluation and Selection.** Figure 4.5.2..

In order to evaluate the scenarios and support the selection process, some comparative charts were made in relation to cost criteria, ways to allocate resources, stages of development, and response to the outline for disasters and emergencies. In conclusion, it was agreed to study in greater detail the scenario number 2 given its flexibility in its supply of workshops, its clear precision of the investment with funds provided by FOREC for infrastructure, and the possibility to modify the cost of housing according to the means of the owners.

This scenario and the process of evaluation and selection, one after the other, were the basis to develop the Project in the site that the Municipal Administration had chosen.