

## **5.4 Model Area of Group C : Esperanza III Area**

### **5.4.1 Natural Conditions**

#### **(1) Topography and Geology**

Esperanza III, which belongs to Valverde Province in the northwest of the Dominican Republic, is located at the 12km northeast of Mao where is the seat of the provincial office and at the 33km northwest of Santiago where is the second largest city in the country. The area is at longitude 71°12' W and latitude 18°27' N. The farmland of the area is situated between the Yaque del Norte River and Northern Mountains and declines gently from north to south within 80m to 100m in altitude. The area mainly consists of fluvial deposits such as muck, limy sand, clay and gravel in the Quaternary by the Yaque del Norte River and its tributaries.

#### **(2) Meteorology**

Esperanza III is located in Cibao that is a granary of the Dominican Republic, and is 12-km far from Mao where meteorological data are collected. In Mao where is in the middle of Cibao Valley, annual rainfall records about 700-mm but Esperanza III is supposed to have more rainfall, more than 1000 mm, since the area is at the foot of Septentrional Mountains. A vegetation map shows that Esperanza III is a part of subtropical dry forest as the same as Tamayo.

The meteorological data in Mao indicate that there are two rainy seasons (from May to June and from September to October) but more than six months have less than 5 rainy days. Natural vegetation around the area is more abundant with grasses than that of Tamayo, which means that common plants can grow only with rainfall here. The maximum monthly average temperature ranges between 30 and 36 degrees while the minimum temperature are from 19 to 23 degrees. The maximum 24-hour rainfall from 1941 to 2000, 178.6 mm, was recorded in June 1978.

**Table 5.11 Climate Data - Mao**

Month		1	2	3	4	5	6	7	8	9	10	11	12	Total
Rainfall	(mm)	25.4	33.8	40.1	73.5	126.2	80.2	28.3	43.7	75.2	86.3	57.4	42.2	712.3
Rainy days	(days)	3.3	3.7	4.2	5.9	9.4	6.4	2.8	4.2	5.7	7.0	5.7	4.4	62.8
Temp.-Max.	(degree)	30.3	31.0	32.4	33.4	33.8	34.7	35.1	35.6	35.3	34.4	32.3	30.6	-
Temp.-Avg.	(degree)	24.5	25.1	26.2	27.2	27.9	28.7	29.1	29.4	29.0	28.2	26.6	25.0	-
Temp.-Min.	(degree)	18.7	19.2	20.0	21.1	22.0	22.7	23.2	23.2	22.6	22.0	20.8	19.3	-

Note: Rainfall:1940-1996, Rainy days:1954-1996, Temperature:1948-1995

Source: Oficina Nacional de Meteorologia

#### **(3) Water Resources and Groundwater**

The settlement area has 2,600 tareas of land. All of the area is irrigated by water that originates from the Yaque del Norte River. Accordingly no irrigation wells are equipped in the area due to enough surface water.

#### **(4) Soils**

The area was formed by sediments on a fringe of an alluvial fan made by tributaries of the Yaque del Norte River running from the Septentrional Mountains. The dominant soil in the area is loamy but relatively clayey and possible to use as paddy fields. These sedimentary soils originated from alluvial materials carried by the Septentrional Mountains and the Yaque del Norte River.

According to the survey for farmland zoning done by SEA in September 1999, the farmlands of Esperanza III is classified into Class III (suitable for irrigation but medium productivity due to some limiting factors such as dry climate, saline soils, low fertility, many gravels, thin surface soils and so forth). The northern part is classified into Class IV, low to medium productivity and not suitable for irrigation but possible to use as orchards or pasture/grazing land if desirable measures are applied to soil erosion, irrigation and drainage, nutrition and so forth.

#### **5.4.2 Socio-Economic Conditions**

##### **(1) Demography**

The population of Damajagua where many farmers work in Esperanza III is 4,373 according to the 1993 Census. The ONE estimates that the population of Valverde increases at a rate of about 3.9% annually. With an assumption that this growth rate continues, the population of Damajagua in 2000 is estimated at 5,714.

##### **(2) Income and Expenditure**

The “Focusing on Poverty” survey by ONAPLAN in 1997 shows that the share of poor households in Damajagua accounts for 62.4%, and 68.5% in Valverde.

Household survey conducted in Esperanza III shows an average monthly personal income of the area of RD\$3,170. This is not very different from the average monthly household income of RD\$3,986. However, the incomes of Esperanza III are actually higher than those of the other model areas.

According to the ONE data, the unemployment rate of Valverde is 21.5%, which is relatively low in the country. However, the household survey indicates that the share of the employed accounts for 36.3% only. The employment of women is 21.1%, which is lower than that of men, 52.9% but higher than that in the other settlement areas. Presumably, this implies one of the tendencies that this area has been already incorporated in a wave of urbanization.

##### **(3) Industry Structure**

###### **1) Agriculture and Animal Husbandry**

Esperanza III has an area of 6,000 tareas but the study area is one of these areas, Los Fernandez has an area of 2,600 tareas.

One of the agricultural characteristics in Los Fernandez is contract farming with private tobacco companies. If farmers get a contract with the companies, agricultural materials such as seedlings, the companies provide fertilizers and agrochemicals and technical assistance. The results of field survey show that 76% (35/46) of the participants for workshop cultivate tobacco. However the farmgate price of tobacco, which was RD\$3,500/QQ in 1988, has recently been decreasing (RD\$1,500-2,000/QQ), so tobacco farming is not any more profitable. One farmer told that he harvested 50QQ of tobacco from 25 tareas and received RD\$76,000 (unit price: RD\$1,520/QQ) but he got little profit after paying the fees for seedlings, chemicals and technical assistance to the tobacco companies.

Some other crops cultivated in the area include cassava, plantain, papaya, pigeon peas and so forth. The agricultural production data of the whole area of Esperanza III is shown below.

**Table 5.12 Agricultural Production in Esperanza III (AC-336), 2000**

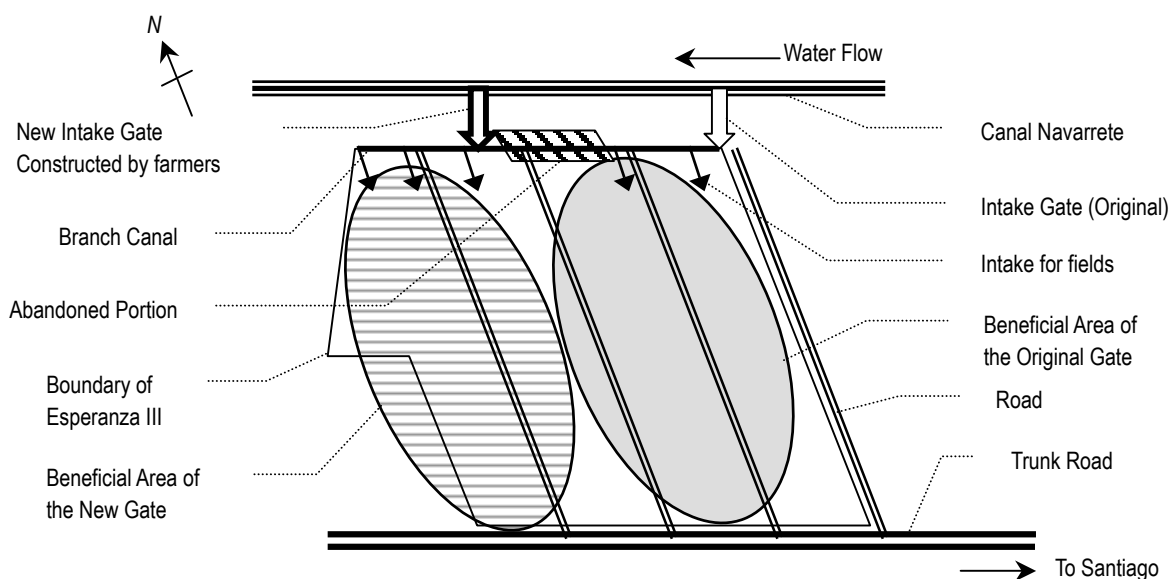
(Unit: tarea)

Crop	Existing Area	Planted Area	Irrigated Area	Harvested Area	Production	
Rice	787	1,018	1,018	1,266	5,352	QQ
Banana	436	138	138	1,000	8,891	bunch
Cassava	763	805	805	899	9,517	QQ
Pigeon pea	405	640	640	590	1,731	QQ
Tobacco	330	260	260	310	398	QQ
Maize	167	330	330	255	282	QQ
Papaya	32	62	62	122	38,961	pieces
Tomato (industrial)	85	135	135	70	1,410	QQ
Red beans	185	185	185	45	53	QQ
Plantain	650	345	345	33	100	thousand
Cucumber	25	55	55	30	250	QQ
Watermelon	60	60	60	30	20,000	pieces
Green pepper	7	32	32	25	30	QQ
Eggplant	-	25	25	25	238	QQ
Sugarcane (fresh)	60	-	-	7	8,080	pieces
Coriander (seeds)	5	25	25	5	20	QQ

Source: IAD Boletín Estadístico 2000, Vol. 26

These crops receive water from the main irrigation canal (Canal Navarrete). The volume of irrigation water delivered from one intake that was originally installed for this area is not sufficient to cover all requirements in the area. In particular, the western part of the area had faced irrigation water shortage because the water had been diverted from the upstream lateral at northeast point. To improve the water shortage, farmers constructed another new intake gate on the main canal that is located at about 500m downstream of initial intake gate. The second gate consequently got more irrigation water for the western part. (See Figure 5.16)

Rice is the main crop in Cibao and commonly cultivated around the area but it is not popular inside Los Fernandez. The main reason for the unpopularity is the shortage of irrigation water. There are very few people living inside the area. Livestock production is for self-consumption only.



**Figure 5.16 Diagram of the Irrigation System in Esperanza III**

## **2) Other Industries**

In the municipality of Esperanza, Valverde Province, a Free Zone was established in 1988 where ten sewing companies were located. The largest company engages in the sewing of trousers and employs more than 1,000 persons. The opening of the Free Zone, which almost coincided with the closure of the sugar refinery factory in Esperanza, helped lessen unemployment problems in the area. As of 2000, the zone provided 7,462 jobs.

According to the household survey in Esperanza III, the employment structure by sector consists of 32% in manufacturing, followed by 25% in commerce and 21% in agriculture. This also indicates a trend of urbanization in the area.

The market has been changed by failure of tobacco planting. At present, about half sell crops to middlemen, but only 6% vend to local shops and public. A large number of farmers (60%) sell to local community instead. Considering good position near local cities and large city Santiago just on the National Road No.1, there seems to be much room for improvement on marketing.

## **(4) Social Infrastructure**

### **1) Road**

The National Road No.1 connecting Santiago and Monte Cristi, borders on the south side of Asentamiento Proyect Los Fernandez. The National Road No.1 is paved in good condition with 2 lanes. Los Fernandez is bordered also the other 3 side by local roads with the width of 5 ~ 6 m. The community is developed along the east - west road and the north - south road (length 2 km, width 5m, not paved).

## **2) Domestic Water Supply**

Esperanza III Area has a water supply system, which uses Maimon River as a water source. The water taken from the river is treated by a filtration plant and stored in the reservoir tank with capacity of 2,000cu.m. The water is delivered to the houses by gravity. Each household is charged with RD\$25 per month of water tariff for his/her consumptive use.

## **3) Electricity**

The electricity comes from Esperanza, and all streets at Damajagua have electric lines with 110 Volts. The electric lines are provided with transformers located regularly at important points like the school and clinic.

## **4) Telephone**

Telephone service is available at Damajagua. One public telephone is in front of the clinic.

## **5) Housing**

Damajagua village is developed along the north-south road and the crossing road extending to the east. Most houses are detached wooden structure.

## **6) Public Health**

There is a Rural Clinic in Damajagua staffed with one doctor and one nurse. The clinic receives 20 to 30 patients a day from Monday to Friday. Types of diseases that the patients suffer from are: 1) flu (30%) or pneumonia (15%); 2) skin diseases (25%); 3) gastroenteritis (20%); and 4) vaginitis (10%). The doctor normally provides consultation in the morning (8:00 - 12:00) and visits patients' houses in the afternoon (14:00 - 16:00). They also hold meeting with health promoters on vaccination or gives some instruction or training once a month. The doctor points out insufficiency of medicines, such as disinfectants, antipyretics or anti-inflammation, vitamins, or of gauze. The doctor is requesting from an NGO, named Fundación Rafael Tomas Fernandez Dominguez, medicines and materials. There is a botica popular in the same building of the rural clinic and managed by another person than those working for the clinic.

There are two health promoters in Damajagua Village and they carry out health investigations, vaccination and some health education in the area. A health committee with 7 members makes activities to assist health promoters or rural clinic. The committee, with the doctor in rural clinic, is requesting provision of medicines to the provincial office.

Almost all houses have their own latrines. There are waste collection services in Damajagua. Maizal Municipal District sends a truck once a week. People put their garbage packed into a bag, called "saco", along the street in front of their houses. The garbage is loaded on an open dump truck and the bags are returned, been back to the same place.

## **7) Education**

There is a large Centro Educativo de Damajagua in the Damajagua Village (Paraje), which serves as a basic level school in daytime (morning and afternoon shifts) and as a medium level school at night. Outlines of the area are as follows.

### **- Number of Pupils for Basic Level**

Grade	Pre-primary	1st	2nd	3rd	4th	5th	6th	7th	8th	Total
Classes	1	2	2	3	2	2	2	1	1	16
Pupils	52	56	62	76	93	86	46	43	28	542

- 16 shifts of teachers with 11 teachers
- 7 classrooms with electricity supply
- Water supply system (not working well), flush toilets
- Site area: 2,655 sq.m, Floor area: 276 sqm

### **- Number of students for Medium Level**

Grade	1st	2nd	3rd	4th	Total
Classes	2	2	2	2	8
Students	76	97	84	62	319

- 20 teachers
- Female students account for 64% of the total (1.8 times of the male students).

According to the director, needs of the school are: 1) three to four more classroom; 2) repair of water supply system and toilets; 3) a library; 4) more courts or field for sports; and 5) audio-visual equipment and computers. There is a parents and teacher association (Asociación de Padres y Amigos de la Escuela), which discuss problems in the school and sometimes contribute to minor repairs. The presidents cited as problems of the education in the area as low attendance rate of the pupils and students and same ones mentioned by the director of the school.

## **5.4.3 Development Plan**

### **(1) Income Generation Approach**

#### **1) Agricultural Development Plan**

There are three approaches for the agricultural development plan of Esperanza III : (1) rehabilitation or development of agricultural infrastructures; (2) strengthening of agricultural extension services; and (3) improvement of agricultural marketing system. The first approach mainly intends to increase the production amount, while the second approach includes two purposes, namely, the increment of production amount through better farming practices and the improvement of product quality. The third approach tries to increase farmers' income by the improvement of farm produce marketing.

The area receives irrigation water from the main canal (the branch Canal Navarrete of Yaque del Notre Irrigation System), where the farmers in the western part of the area constructed their own gate because the

water from the INDRHI gate did not reach their farms. The reasons of water shortage in the western part were not clearly identified. However, there is neither serious water shortage nor problems on operation and maintenance at present (refer to Figure 5.17).

The passive and dependent attitudes of the farmers that originated from the contract tobacco farming are characteristic in this area. Very few farmers are active and independent for the selection of crops and agricultural marketing.

## **2) Micro-industry Development**

To raise income level of residents of the area, efforts should be centered at raising productivity of agriculture. Education and training and extension activities by IAD should be promoted. Since Damajagua is located within commuting distance to Esperanza, measures are to be taken for the inhabitants to get further job opportunities in Esperanza or other towns near there. Since number of employed women is minimal, emphasis should be placed on increasing opportunities for women to get jobs. In addition to introducing a commercial or technical course of the medium level education, application to courses of vocational education and training to be held in Esperanza or Mao should be encouraged. Although scholarship loads would be recommendable, main efforts should be made with by residents themselves.

## **(2) Living Conditions Improvement Approach**

In order to secure the basic living conditions and improve living conditions, the following plans are proposed.

### **1) Road**

Paving of the road is considered in a long period.

It is recommended to introduce public bus service together with neighboring villages at least twice a day for school and business. One route may be diversion of the route along National Road No.1.

### **2) Domestic Water Supply**

Maintenance and operation of the existing water supply system by INAPA is important. Secured and reliable electricity supply is strongly required for regular water supply.

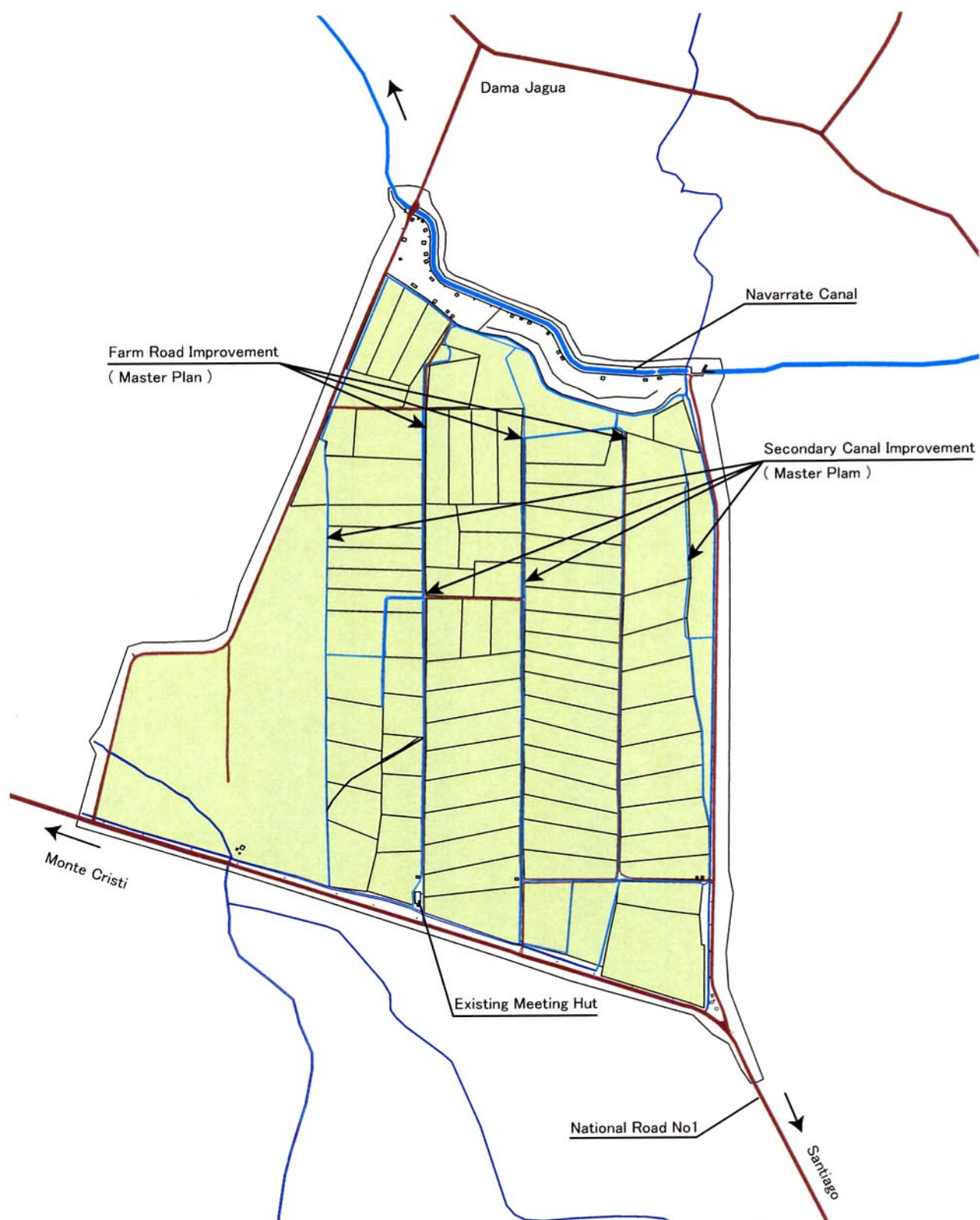


Figure 5.17 Existing Irrigation System in Esperanza III Area and Agriculture Infrastructure Development Plan



### **3) Public Health**

The rural clinic of Damajagua suffers from insufficient stock of medicines and materials for medical care. Currently, the doctor of the clinic asks assistance to a foundation. The medicine and other materials, as well as, equipment should be supplied properly by SESPAS. Additional one doctor or assistant doctor should be dispatched because of large size of population covered by the clinic. Although health promotion is carried out by the doctor in cooperation with health promoters and health committees to some extent, further activities is necessary to actually prevent diseases, such as pneumonia and other infectious disease, and women's diseases. Further, family planning would be a subject for health promotion activities because some families have many children with very small age interval, according to the interviews. School-based health promotion activities are recommendable also in Damajagua. Since many parents are eager to let their children get education, early application of school-based health promotion activities would be possible. Pilot implementation of the programs, as a model, is recommendable.

### **4) Education**

Complete provision of basic education is essential also in Damajagua. Although 25 classrooms, 50 classes, is necessary according to the standard calculation set by SEE, establishment of 27 classes, three classes for each grade from the initial level to 8th grade of the basic level, with 14 classrooms (increase of 11 shifts of teachers and construction of additional seven classrooms) can be recommended, taking into account of current number of pupils in the school. Rather than spending resources for construction of classrooms and for increasing teachers' shifts, more resources should be allocated for quality improvement and to reduce repeaters. The differential can be better used for complete provision of initial and basic education in surrounding small villages or to enhance the medium education.

Although further improvement is required, another task to be implemented by the school is to work as a core school of the schools in the section of Damajagua. The school should be the center and driving force to promote information exchange, such as that on successful practices, workshops with participation of teachers in the surrounding areas, and development of instruction materials suitable to the local conditions of the area. Activities of the PTA of the school are active, compared to other schools. The PTA, in cooperation with the school, should tackle the tough problem of low attendance rate to school. As for medium level education, a commercial or technical course is to be added.

### **5) Sewerage**

From environmental point of view, flush toilet and septic tanks are to be equipped in houses in the area where piped water supply system is completed. They are to be spread as much as possible in the long run.

### **6) Solid Waste Management**

Recycling should be promoted in order to decrease discharged amount of solid waste and to utilize

resources efficiently. Recycling can be profitable business selling metals, glass etc. It is indispensable to have cooperation of residents and separation of waste. In the first step, someone or NGOs should guide and educate local people to understand importance and way of recycling.

#### **7) Electricity**

Expansion of regular and reliable electricity system should be recommended.

#### **8) Telephone**

Improvement of telephone system is recommended.

#### **9) Housing**

Housing is the place for basic life and is basically of individual responsibility. Public sector should promote and guide people to be able to have safe and sanitary houses. Among housing policies, provision of housing loan and enforcement of standard building regulation will be effective.

### **5.4.4 Selection of Pilot Projects**

Through a series of workshops held with farmers in Esperanza III, six project alternatives (agricultural marketing improvement, contract farming improvement, product quality improvement, farm machinery, farming technology assistance, education) were finally proposed. Then alternatives were examined from the viewpoint of the selection criteria of pilot projects. Though Esperanza is one of the most prosperous and advanced in terms of agriculture in the country, the negative effects of tobacco contract farming remained among the farmers. Therefore, agricultural marketing project was selected as the most recommendable for the farmers. However production quality improvement and technical assistance are also essential for the farmers. As a conclusion of the examination, agricultural marketing project combined with the production quality and the technical assistance was selected.

### **5.4.5 Pilot Project for Capacity Strengthening of Marketing Activities**

#### **(1) Workshop on Set-up of the Project**

Series of workshops were carried out for the implementation of the pilot project for capacity strengthening of marketing activities at a warehouse in Los Fernández, Esperanza III in June 2002.

#### **(2) Outline of the Project**

The objectives of the pilot project were: (1) to improve the farmers' negative attitudes to marketing activities, (2) to let them decide what they cultivate by themselves according to price information, and (3) to sell their farm product independently to various markets, through the provision of seminars for marketing activities. The summary of the seminar contents is shown below.

Beneficiaries	Farmers of Mama Tingo Association
Seminar contents	<ol style="list-style-type: none"> <li>1. Sales and Marketing of Agricultural Products <ol style="list-style-type: none"> <li>(1) Functions of Markets <ul style="list-style-type: none"> <li>- The place where demand and supply balance</li> </ul> </li> <li>(2) Specific Characteristics of Agricultural Products <ul style="list-style-type: none"> <li>- Not industrial products, biological and seasonal products</li> <li>- Big price differences depending on seasons</li> </ul> </li> <li>(3) Marketing Channels and Costs of Fresh Agricultural Products (vegetables and fruits) <ul style="list-style-type: none"> <li>- How the fresh products are sold and delivered to consumers</li> <li>- Transportation costs and wholesale/retail margins</li> </ul> </li> <li>(4) Marketing Channels and costs of Staple Food Products (with INESPRE involvement) <ul style="list-style-type: none"> <li>- INESPRE's roles in marketing of staple food products</li> </ul> </li> <li>(5) Sales Strategies of Agricultural Products <ul style="list-style-type: none"> <li>- Price information (collection and analysis)</li> <li>- Which markets to sell?</li> <li>- Direct sales (outside normal market channels)</li> </ul> </li> </ol> </li> <li>2. Selection and Purchase of Agricultural Inputs <ol style="list-style-type: none"> <li>(1) Marketing Channels of Fertilizers and Chemicals</li> <li>(2) Marketing Channels of Agricultural Machines</li> </ol> </li> <li>3. Bookkeeping of Farm Accounting Book <ol style="list-style-type: none"> <li>(1) Cost</li> <li>(2) Income</li> <li>(3) Daily bookkeeping</li> </ol> </li> </ol>

### **(3) Progress of the Project**

#### 6 June 2002

According to the idea proposed by the Study Team in the workshop, 2-3 hour training course would be held once a week and the duration would be 3 months (about 12 times). It would be held at the warehouse of Mama Tingo Association in Esperanza and the Study Team would arrange instructor, training materials and a blackboard. The number of trainees would be 20 and they should be eager to learn and attend the course every week. Furthermore the trainees need to prepare writing implements and calculators. Basically the members of Mama Tingo Association accepted these ideas.

#### 7 June 2002

Although the Study Team had obtained proposals for training courses from three companies, all of them were costly so that the Study Team asked two private marketing consultants to submit a proposal.

#### 12 June 2002

After receiving two proposals, the Study Team selected one of the consultants as a trainer.

#### 13 June 2002

During the weekly meeting of the association, the Study Team explained the progress of the selection of instructor, and told the members of Mama Tingo Association that one consultant who lives in Santiago (Mr. Gomez) is going to be selected. The members basically agreed with the idea. The members decided to have another meeting on June 18 to select 20 trainees.

#### 20 June 2002

In the weekly regular meeting, we firstly introduced Mr. Gomez to the association members and the members of Mama Tingo Association discussed and made a conclusion that they would have courses from 14:30 to 17:30 on Friday that would start on June 28.

Notes and pens would be kindly provided by Mr. Gomez and the JICA Study Team would provide a blackboard and chalks on June 28. Therefore the trainees needed to prepare only calculators.

During the meeting, they discussed the participants to the courses. According to one Japanese volunteer (Japan Overseas Cooperation Volunteers) who attends the regular meetings of the association, some members wanted to attend the courses but were reluctant because they are illiterate. In their cases, the members permitted their literate relatives to attend the courses instead of the member him/herself. In another case, some literate members wanted to attend the courses but he has not been eager to attend weekly regular meetings of Mama Tingo Association so far. Finally they decided that they could attend the courses because the number of trainees did not reach to twenty.

After the meeting, the Study Team requested the president to discuss and extend what they learned in the previous week in the weekly regular meeting every Thursday because some members cannot attend the course.

#### 28 June 2002

First seminar was held at the warehouse of Mama Tingo Association.

#### 19 September 2002

All seminars (12 sections of 3 hours each, 36 hours in total) were finished and 17 of the 20 farmers finished the course successfully and received certificates.

In November 2002, farmers of the Mama Tingo Association organized a study tour with the IAD and SEA officers in the area and visited a farm called Fumica Agroindustrial in Botoncillo of Villa Vasquez, Province of Monte Cristi, Dominican Republic. This farm had more than 500 hectares and the most advanced technology in irrigation. They use the canal water from the Yaque del Norte River, but they have filters installed in their water reservoir. At present, they only use liquid fertilizer distributed by the irrigation system. The farm also has a drainage system to get rid of excess water.

Everything they planted in the farm was under written contract with several companies. For instance, they sell tomato to La Famosa, pigeon pea to Linda, potato to Frito Lay Dominicana, pepper to Baldom Dominicana, but they usually sell onion in local markets especially in supermarkets. In addition, they were planning to grow organic melons in 500 tareas for exportation to Europe. The participants of the study tour were very impressed with the productive system at the farm.

The comparison of the farmers' understanding on agricultural marketing before and after the seminars is shown below.

<b>Before Seminars (2002. 7.5)</b>		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
Q1	Do you know the functions of market?	25	40	30	5
Q2	Do you know how the agricultural product price is decided?	40	20	40	0
Q3	Do you know the prices fluctuate every day?	5	20	15	60
Q4	Do you know how to collect price information?	20	40	40	0
Q5	Do you know a farm accounting book?	35	25	30	10
Q6	Do you know hot to keep a farm accounting book?	40	35	20	5
Q7	Do you know the disadvantages of selling farm product to middlemen?	5	15	60	20
Q8	Do you know that if you sell your production as a group you can lower your production cost and maximize your profit?	5	15	20	60
<b>After Seminars (2003. 5.15)</b>		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
Q1	Do you know the functions of market?	0	0	54	46
Q2	Do you know how the agricultural product price is decided?	0	8	23	69
Q3	Do you know the prices fluctuate every day?	0	0	0	100
Q4	Do you know how to collect price information?	0	0	50	50
Q5	Do you know a farm accounting book?	0	8	33	58
Q6	Do you know hot to keep a farm accounting book?	0	8	31	61
Q7	Do you know the disadvantages of selling farm product to middlemen?	0	0	25	75
Q8	Do you know that if you sell your production as a group you can lower your production cost and maximize your profit?	0	0	17	83

Note: A-Nothing, B-A little, C-Almost, D-Very well (Unit: %)

## **5.5 Model Area of Group D: Tamayo Area**

### **5.5.1 Natural Conditions**

#### **(1) Topography and Geology**

Tamayo is located at the 27km north-northwest of Barahona, which is one of the principal cities of the Dominican Republic. The farmlands of Tamayo are at longitude 71°12' W, and latitude 18°27' N. The area, which belongs to Baoruco Province, is located at the edge of southeast of the province, and is bounded on the north of the right bank of the Yaque del Sur River. The river lies between the Baoruco Province and the Barahona Province. Los Conuquitos, where most farmers of Tamayo Settlement (AC-422) live, is located near the river but the distributed farmlands are about 4km northwest far from the community.

The altitude of the riverbed near the community is less than 40m but the community is located on the terrace at over 50m in altitude, so that floods have not caused extensive damage to the community. The altitude of the farmland (Lot-4) is within 40m to 50m. The top of mountain located in the east of the farmland is 338m height. The slope of farmlands is gently inclined from north to south direction. The area is a part of the northern edge of the delta formed by the Yaque del Sur River that flows from Central Mountains. The farmland areas were distributed to farmers after leveling of hilly terrain that consist of alluvium and terrace deposits of the river.

#### **(2) Meteorology**

Based on the data analysis of Tamayo Meteorological Station, which is 4 km far from the area, there is only 400-mm annual rainfall around Tamayo, which indicates that the area corresponds to the driest region in the

Dominican Republic. A vegetation map shows that Tamayo is a part of subtropical dry forest.

The data show that only four months, May, June, August and September, exceed 50-mm rainfall and it rains less than 20-mm from December to March. Accordingly, natural vegetation around the area is dominated by some specific plants that adapt to dry climate (Buckthorn (*Prosopis juliflora*), Guazábara (*Opuntia caribae*), Cayuco (*Cereus hexagonus*), Guatapaná (*Libidia coriaria*), Guaiac (*Guaiacum officinale*)), therefore, the natural environment is very harsh for plant growth.

The maximum 24-hour rainfall (1964-1993) is 575.4 mm recorded in June 1972. Annual average temperature is 26.9 degree Celsius. The average monthly maximum temperature ranges from 31 to 33 degree Celsius while the minimum ranges from 20 to 23 degree Celsius, which means that seasonal differences are not remarkable.

**Table 5.13 Climate Data - Tamayo**

Month		1	2	3	4	5	6	7	8	9	10	11	12	Total
Rainfall	(mm)	8.9	8.8	15.6	37.0	61.5	59.1	23.2	58.9	60.2	46.0	31.7	18.7	429.5
Temp.-Max.	(degree)	31.1	31.1	31.3	31.5	31.9	32.3	33.1	33.2	33.1	32.7	32.4	31.6	-
Temp.-Avg.	(degree)	25.3	25.5	25.9	26.5	27.1	27.5	28.0	28.0	28.0	27.6	27.0	25.8	-
Temp.-Min.	(degree)	19.6	20.0	20.5	21.5	22.3	22.8	22.8	22.8	22.8	22.5	21.6	20.1	-

Note: Rainfall:1964-1993, Temperature:1965-1993

Source: Oficina Nacional de Meteorología

### **(3) Water Resources and Groundwater**

Out of the total farmland area, 1,270 tareas, 852 tareas can receive irrigation water from the irrigation canal (Barranca – Altamira Canal) that takes water from the Yaque del Sur River. Plantain and papaya are major crops there. Due to the dry climate and sandy soils, irrigation is indispensable for crop cultivation. Since the ground elevation of the remaining 400 tareas is higher than that of the irrigation canal, gravity irrigation is impossible and the area is consequently abandoned. No wells for irrigation are constructed in the area, since the annual rainfall is very few at around 400 mm. It is reasonable that the potential of groundwater development is low in the area.

### **(4) Soil**

It is inferred that the land of the area was formed by flooded or riverbed sediments of the Yaque del Sur River. The sediments contained sandy deposit with gravels, and the present hilly topography was made by partial erosion at flat sedimental plain when the land got a geological upheaval or a fall of sea level. The area covered by natural bushes and shrubs was abandoned because the land was not suitable for farming.

The land reclamation works, such as the cutting and removing of bushes and shrubs and the land leveling, might be implemented before the distribution of farm lots in the same way that the west side of the neighboring Lot-3 was done.

The soil in the area is dominated by sandy soils with less organic contents. Some places of the area contain much gravel (50-100 mm diameter). Light soils are distributed in the southeast of the area.

According to the report made by INDRHI, the soil in the area corresponds to Tamayo Soil Series, which has following features.

- Soil pH : generally alkaline
- High base saturation and cation exchange capacity
- Very low organic matter content
- High drainage capacity with relatively good retention of humidity

The survey for farmland zoning done by SEA in September 1999 indicates that the area around Tamayo is classified into Class III (suitable for irrigation but medium productivity due to some limiting factors such as dry climate, saline soils, low fertility, many gravels, thin surface soils and so forth).

### **5.5.2 Socio-Economic Conditions**

#### **(1) Population**

The population of Los Conuquitos where the farmers of the Tamayo Settlement live is 472 according to the 1993 Census. The ONE estimates that the annual population growth of Bahoruco is about 2.4%. With this growth rate, the population of Los Conuquitos is estimated to grow to 580 in 2001.

#### **(2) Income and Employment**

The 1997 ONAPLAN Study, "Focusing on Poverty," estimates that the share of poor households in Los Conuquitos is 91.1% and 86.6% in Bahoruco as a whole.

The household survey of this Study has shown that the monthly average personal income in Los Conuquitos is RD\$1,919. This figure and the estimated household income of RD\$2,540 are very low. The current law sets the monthly minimum wage offered by private companies at the range from RD\$2,075 to RD\$3,415. The incomes in Los Conuquitos are lower than the minimum wage range.

The ONE data show that unemployment rate in Bahoruco Province is 36.0%, which is the second highest in the country next to Samana Province. The household survey in Los Conuquitos has found that the share of those who are employed is only 35.0%. In particular, the employment rate of women is 4.5%, which is far lower than that of men, 66.2%.

#### **(3) Industry Structure**

##### **1) Agriculture and Animal Husbandry**

Since the residential area for settlers are 4-km far from farmlands, people go there by donkeys or motorbikes. Some people who do not have a transportation means need to walk, so they go early in the morning and return very late. As compared to the neighboring area of Lot 1-3 (more flat and close to houses) distributed as AC-166, the area called Lot 4 has several disadvantages as shown below.

- It takes more time to go to farmlands.

- Because the area is located at the bottom of canal system, irrigation water is often very little.
- Soils are sandy in comparison with the loamy soils in Lot 1-3.
- Some farmlands contain much gravel.

One of the agricultural characteristics in Tamayo is that normal plants cannot survive without irrigation water due to its dry climate. In the area, the irrigable lands which is lower than the canal elevation are used as farmlands while other lands where is higher than the canal are not utilized at all. Even in the irrigable areas, some farmlands located in the downstream of lateral canals are not cropped due to water shortage.

Irrigation canal for Tamayo was constructed by INDRHI and intake is 12-3 km far at the village called Honduras on the Yaque Del Sur River. INDRHI is in charge of the maintenance of main canal and water distribution to each Lot, but farmers themselves manage the water distribution within the Lot. Based on the field survey, the water is rotationally distributed from the Lot-1 to Lot-4 in order and the one term of irrigable days for Lot 1, 2 and 4 is 3-day while it is 8-day for Lot 3 where the area is bigger than others. This water distribution manner was not followed in the past but there are very few farmers who break the manner because the penal regulations become severer (a penalty of RD\$500 and 3-day custody).

The crops cultivated are mainly fruits such as banana, plantain, papaya and so forth but maize and vegetables like bell pepper and melon are also cultivated. Most of these crops are purchased by middlemen who come to the fields and transport these produce to major cities such as Santo Domingo and Barahona. As for livestock, people keep only small animals and poultry for self-consumption.

## **2) Other Industries**

In Tamayo, there is only one small company that produces concrete blocks. A Free Zone is located in Barahona, but not in Batoruco. Batoruco has one of the highest unemployment rates in the country because it has few industrial activities.

The household survey conducted in the Tamayo Settlement area has indicated that the largest share of employment, 75%, is found in agriculture, followed by services, 13%. There are almost no other industries that provide employment opportunities. The data show that the area has strong rural characteristics.

Most farmers sell crops (plantain, banana, cassava, melon etc.) to middlemen at farm. The middlemen sell them in Santo Domingo and Barahona. Only small portion is sold in Vicente Noble and Tamayo town transported by motorbike or donkey. Price is usually decided by middlemen and most farmers think it low. Some middlemen make payment after they return from sales in Santo Domingo.

Some grocery stores in Vicente Noble buy agricultural products from Santo Domingo because of variety and small quantity of each product. It implies room for small local market to be facilitated.



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Some glossary stores in Vecente Noble buy agricultural products from Santo Domingo because of variety and small quantity of each product. It implies room for small local market to be facilitated.

#### **(4) Social Infrastructure**

##### **1) Road**

The major road connecting National Road No.44 and No.48 via Vicente Noble and Tamayo is partly paved and passable at all season. The access road to Los Conuquitos from this road along Yaque Del Sur River is also passable and regular condition. The road between Los Conuquitos and the farm (Lot 4) is bad condition and is not passable by normal vehicle in wet condition.

Length	Location	Width	Condition	Surface
1.8 km	Main road - Los Conuquitos	6.0 m	Regular	Not paved
3.5 km.	Los Conuquitos - Altamira	6.5 m	Regular	Partial paved
1.5 km	Altamira - Intake	4.0 m	Regular	Loose surface, dry weather only
6 km	Los Conuquitos- Lot 4	3.7 m	Poor (4WD only)	Loose Surface, dry weather only
4 km	Altamira - Lot 4	3.7 m	Poor (4WD only)	Loose Surface, dry weather only

##### **2) Domestic Water Supply**

Los Conuquitos that is the residential community of farmers in Lot-4 has a water supply system with one well located at the riverbed of Yaque Del Sur River. The well was newly replaced by INAPA in 2000 because the former one was washed out by the hurricane in 1998. The well has a capacity of 1,450 lit/min. with 6 inches of diameter, 18 meters in depth. The water level in the well is 9 meters deep. The water is pumped up by submersible motor pump installed in the well and supplied to the reservoir tank constructed on the hill side of community with capacity of 20,000 gallons. Water is delivered to houses by gravity. According to the interview for users, water quality supplied from the well is good for drinking. However, the water supply system is sometimes cut off for a few days due break down of power supply. In that case villagers utilize water from river. Each household is charged 12 pesos/month as consumptive use.

##### **3) Telephone**

No telephone line is available in Los Conuquitos. There is a public telephone of TELEPHONE COMPANY of wireless system in front of the Police Office in Altamira.

##### **4) Community center**

A community center is under construction.

## **5) Housing**

Most housing in Los Conuquitos is detached wooden houses that had been damaged by Hurricane George, while the houses in Altamira are block structure constructed by public sector.

## **6) Public Health**

There is no rural clinic or *botica popular* in Los Conuquitos. People in the community have to go to hospitals or pharmacies in Tamayo, paying DR\$ 40 for a person (DR\$ 400 at night) or to a rural clinic in Altamira through 2km road of bad condition. The rural clinic is named as *Clinica Rural del San Ramon* (San Ramon is name of another community next to Altamira), served with one doctor and one nurse. Volunteers work for cleaning and washing. The clinic opens 8:00-12:00 and 14:00-17:00 through Monday to Friday. The doctor often visits houses of the patient who cannot come to the clinic. The clinic receives 40 to 60 persons a day, 30% of whom are from Los Conuquito, 40% from Altamira/San Ramon, and 30% from other villages, such as Balanca. Around 60% of the patients have flu and respiratory diseases such as pneumonia and the rests suffer from various types of diseases, such as gastrointestinal diseases, including parasitic ones, high blood pressure, etc. Sometimes tuberculosis occurs. The doctor says that he often gives health orientation to residents before he opens the clinic.

The building of the clinic was originally constructed as an ordinary house and is often flooded in cases of intensive rain. (floor area: 60 sq.m) Since the community of Altamira does not have water from the water supply system for domestic use, the clinic uses water from a canal of the irrigation. Other serious problems pointed out by the doctor are: 1) one doctor is not enough; 2) the refrigerator is out of order and some type of medicine cannot be kept; 3) essential medicines and materials, such rubbing alcohol, disinfectant, absorbent cotton, and gauze, are missing; and 4) laboratory analysis is not available. There is no *botica popular* in Altamira or nearby.

Almost all households have their own latrines, often in a separated hut. There is no collective waste disposal service in the community.

There are two health promoters of SESPASS in Los Conuquitos and they carry out health investigations and reporting some diseases to provincial office of SESPAS, assist vaccination and participates in some health education activities in the area. There are two women's associations in the community, namely *Asociación de Mejeres Unidas para Desarrollo* and *Asociación Mujeres Asia el Progres*a with 12 and 20 members, respectively. Both associations have meeting weekly. The former discusses matters on social development, such as crediting for small business, water supply electricity or roads. The later discusses similar matters or housing projects. Both normally request assistance from governmental organizations or NGO, such as MUDE (Women in Development) or *Lemba de Baraona*.

## **7) Education**

There is a *Centro Educativo de Los Conuquitos* in the community, which has classes for 1st to 4th grade of basic level. Outlines of the school are as follows.

- Number of Pupils

Grade	1st		2nd		3rd		4th		Total	
Pupils	M	F	M	F	M	F	M	F	M	F
	13	15	28	13	10	15	14	12	101	92
	28		41		25		26		193	

- Four classes (two in the morning and two in the afternoon) with two teachers
- One building with two classrooms, and another for dining and cooking
- Latrine house of two booth in bad condition
- Site area: about 1,476 sq.m, Floor area: 181 sq.m

The performance of the school in Los Conuquitos seems quite low. Last year only 62% of the pupil in the 3rd and 4th grade had passed the final examination (3rd – 65% and 4th – 58%, male – 57% and female – 66%). The school in Altamira has classes only up to 6th and students for higher grade or middle level in Los Conuquitos as well as in Altamira have to go to the primary school in Santana or schools in Tamayo through long way of very bad conditions (They often select school in Tamayo). Another serious problem in the community and adjacent areas is that there are no pre-primary classes in schools of basic level, including that in Santana.

### **5.5.3 Development Plan**

#### **(1) Income Generation Approach**

##### **1) Agricultural Development Plan**

Agricultural development contributes to stabilize the livelihoods of farmers through the increase of agricultural income. In Tamayo, there are four approaches for the agricultural development plan: (1) rehabilitation or development of agricultural infrastructures, (2) increase of land use efficiency, (3) raising agricultural production efficiency, and (4) improvement of agricultural marketing system. The first and second approaches mainly intend to increase the production amount, while the fourth approach tries to increase farmers' income by cutting intermediary margins. The third approach includes two purposes, namely, the increment of production amount through better farming practices and the improvement of product quality. For the agricultural development plan in Tamayo, several points should be considered in relation to the approaches mentioned above.

Specific Conditions	Related Approaches	Reasons
The area has very dry climate and water resources are limited.	(1), (2), (3)	Without irrigation facilities, crops cannot grow, so farmland expansion without irrigation development is very difficult. Farming practices suitable for dry areas are also necessary.
Although irrigation canal exists, the area is situated in the tail of the irrigation system.	(1), (2)	Because the irrigation system is not appropriate (no water regulators nor check gates), water utilization is limited. Moreover irrigation water is not enough in downstream areas.
The access conditions to agricultural markets are not good.	(4)	Due to its location handicap, intermediary margins are high.
Some lands cannot receive irrigation water because the land elevation is higher than irrigation canal.	(1), (2)	If new irrigation facilities are developed, expansion of farmland is possible.

Present land use conditions are shown below.

- Irrigable area 800 tareas
- Not irrigable area (abandoned due to higher level than irrigation canal) 308 tareas

As for the not-irrigable area, it is impossible to use the land for farming under the dry environment unless irrigation facilities such as pumps are introduced. There are some farmlands where no crops are cultivated. It is important to clarify the reasons of no cultivation because appropriate measures will be drawn from the clarification. For instance, the improvement of present irrigation facilities and irrigation techniques are necessary if water shortage is a problem. The water distribution facilities and water application method on farm level particularly needs to be improved. Although main canal is concrete-lined, lateral canals are all in unlined. In some fields, basin irrigation is observed but it is not recommendable in terms of water use efficiency. It is possible to increase irrigated farmlands if the irrigation application methods are improved and irrigation water is saved. Moreover elimination of cobbles and gravels from farmlands is effective for the improvement of soil conditions and workability of farming practices. These measures will enable the increase land use efficiency, which in turn increases production and farm income.

For a cropping plan, it is necessary to select proper crops such as cash crops for Santo Domingo or local markets and home consumption. For the cash crops, it is important to secure some marketable amount of quantity. It also needs to avoid monoculture by combining several crops for risk management at the same time. For the selection of crops, it is essential to consider the type of market or use as shown below.

- Crops for big markets (transportable and non-perishable crops such as plantain, papaya and melon)
- Crops for home consumption (small-scale vegetable production, plantain, etc.)
- Crops for local markets (small- to medium-scale fresh vegetables production)

Strengthening of extension services is also indispensable because farming techniques are still at low level.

In terms of agricultural infrastructure, following improvement is proposed.

- Improvement of checks and turnouts of main irrigation canal  
Because the existing main irrigation canal (2.2km) has relatively steep slope and water level is not controllable by check gates, planned and quantified distribution of water is difficult.
- Improvement of on-farm irrigation facilities (2.5km)  
Due to unlined on-farm canals, conveyance loss of irrigated water is much and water distributed does not reach up to the end of fields. It is possible to improve the problem by using cheap lining method such as a lining by concrete hollow blocks.
- Development of unutilized area (308 tareas)  
The area is abandoned because the land level is higher than that of canal. However, the cultivation is possible, if following works will be applied.
  - Installation of two pumping stations including farm ponds, pumps, conveying pipelines and turnout valves (some problems for costs of operation, management and renewal and for management body shall be solved before starting the works)
  - Clearing and removing of shrubs and bushes and land leveling
  - Removal of cobbles and gravels from farm lots
- Improvement of access to the fields in Lot 4.  
It is possible to access to Lot-4 through the service road along Yaque del Sur - Aguacatico Canal that is newly constructed if connection works between the crossing bridges of the Aguacatico Canal and on farm roads in Lot-4 can be done.
  - Existing road improvement between Los Conuquitos and the farm fields in Lot 4 (7km)
- Removal of cobbles and gravels in farm lots
  - Removal of cobbles and gravels from about 200 tareas of 10 farm lots provides possibility of farming or takes off a disturbance for working.

## **2) Micro-industry development**

Introduction of cash crops promotion and small livestock breeding is suitable. Since ratio of women without jobs is extremely high, support for establishment and management micro-enterprises by women is necessary. Including surrounding villages, development of specialty production campaign, “One village - one product”, is recommendable. Institutional arrangements, such as those for vocational training and other human resource development, credit, provision and exchange of information, training facilitators and support of their activities, competition and cooperation among villages, are necessary.

## **(2) Living Conditions Improvement Approach**

In order to secure the basic living conditions and improve living conditions, the following plans are proposed.

### **1) Road**

The road between Los Conuquitos and Tamayo town is passable at all season and is wide enough for both traffic. Paving of the road is considered in a long period. Road improvement between the village and Lot 4 is priority.

There is no public transport service and the villagers are obliged to spend high cost to go to Tamayo and other outer towns. It is recommended to introduce public bus service together with neighboring villages at least twice a day for school and business.

### **2) Domestic Water Supply**

Maintenance and operation of the existing water supply system by INAPA is important. Regular and reliable electricity supply is strongly required for regular water supply.

### **3) Public Health**

Due to the scale of the village, Los Conuquitos cannot constitute an aerial unit in terms of public health. Los Conuquitos should be included in a public health zone that includes Altamila, San Ramon and other neighboring villages.

The rural clinic in Altamila is in serious condition with poor equipment, and inadequate medicines, compared to other clinics. Improvement of building, facilities, equipment and stock is urgent task to be done. A building with normal design for clinics should be re-built to avoid floods. One doctor is not enough to serve for scattered villages. After deployment of an additional doctor, regular doctors round are to be introduced. The improvement of this primary health care unit will bring substantial advantage even for the inhabitants of Los Conuquitos, who actually have to go to Tamayo through a long way when they get sick. A botica popular should be built in or next to the clinic. In Los Conuquitos a botica popular, or some revolving fund for medicines is urgently necessary.

Health promotion activities, currently done by the doctor, should further be expanded, through cooperation with health promoters of SESPAS and health committees of the villages, in order to actually prevent diseases or to attain better health of the inhabitants. The subjects of the health promotion activities should be nutrition improvement, prevention of influenza or infectious diseases, or pre-maternal and maternal cares, corresponding to the public health condition of the area. School-based health promotion will also be effective and efficient in this area.

### **4) Education**

Universal provision of basic level education is essential for the socioeconomic development of the area. A seeping reform is necessary for remedial of the performance of the school (In 1999/2000 school year, only 65% of pupil in 3rd grade, 60% of at 4th grade, 57% boys and 68% girls were approved for promotion).

In the long-term viewpoint medium level education should also be provided. Establishment of practical courses, such as agriculture, in the existing high schools in Tamayo and subsequent supports for the access to the courses that are necessary for the development of Los Conuquitos. A set of classes (from 1st to 4th) should be established. Agricultural courses may be preferable.

Although complete establishment of classes for basic level education (from initial level to 8th of the basic level) is preferable, increasing classes up to 6th grade (additional three classes or shifts of teachers), will be practicable in the short term. It is necessary to construct building with two classrooms, or to repair the building currently being used as a kitchen and a dining room and divide into two classrooms and to build a kitchen house. By 2015, a complete set of classes should be established. Multiple-grade classes are not recommendable due to the low performance of teachers, unless special training for teachers in charge of the classes are provided.

To increase classes and to improve the performance, it is inevitable to secure quality teachers, to train in-service teachers and to provide well-prepared instruction materials. Massive support by the district office of SEE in Tamayo is necessary. Since the surrounding villages are also suffer from similar conditions, grade up of management level of the district office with rigid support (human resource and finance) from the central office of SEE. Central office of SEE should also develop a system where the district offices can manage or guide schools to operate suitably to local conditions, such as introduction of holidays in the farmers' busiest season, or flexible application curriculum or development of local teaching materials. Management tools for the system should be prepared by the central and district offices.

Although adult education is necessary to be introduced, current courses of SEE might not suitable to the conditions of the area and surrounding villages. A new system is to be developed for adults in scattered villages by combining self or group learning and periodical schooling. Participation of local communities may assist for better school management. Organization of PTA should be started.

## **5) Sewerage**

From environmental point of view, flush toilet and septic tanks are to be equipped in houses in the area where piped water supply system is completed. They are to be spread as much as possible in the long run.

## **6) Solid Waste Management**

Recycling should be promoted in order to decrease discharged amount of solid waste and to utilize resources efficiently. Recycling can be profitable business selling metals, glass etc. It is indispensable to have cooperation of residents and separation of waste. In the first step, someone or NGOs should guide and educate local people to understand importance and way of recycling.

## **7) Electricity**

Expansion of regular and reliable electricity system should be recommended.

### **8) Telephone**

Telephone system will be basically prepared by private sector. Only it is profitable, the work will be implemented. According to improvement of standard of living, necessity for telephone will rise.

At present service of cellular phone is very weak. Improvement of condition of cellular phone seems to be first easy step. On the other hand, emergency communication system should be established in case of sudden illness and accidents.

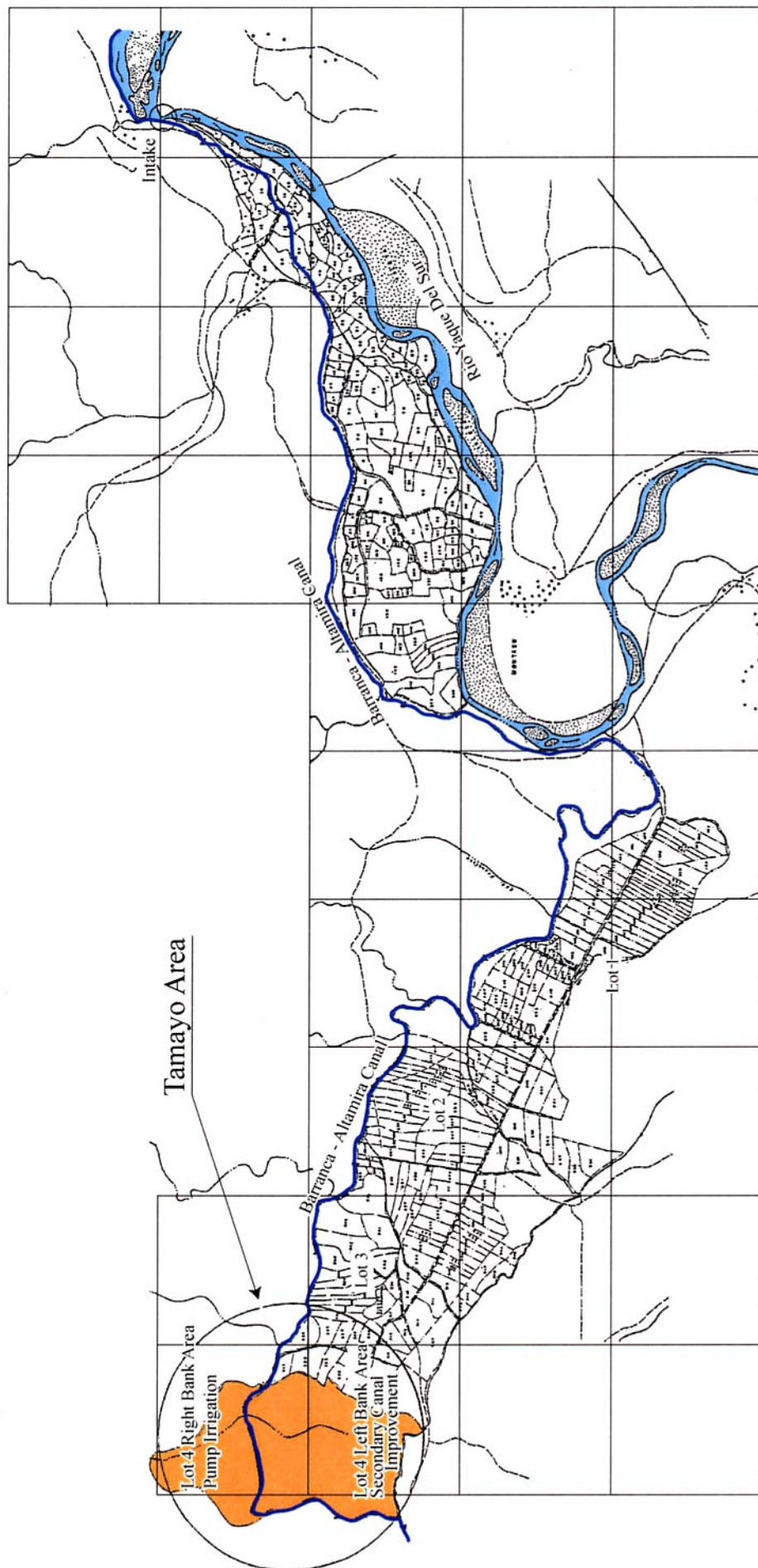
### **9) Housing**

Housing is the place for basic life and is basically of individual responsibility. Public sector should promote and guide people to be able to have safe and sanitary houses. Among housing policies, provision of housing loan and enforcement of standard building regulation will be effective.

#### **5.5.4 Selection of Pilot Projects**

Through a series of workshops held with farmers in Tamayo, six project alternatives (improvement of irrigation facilities, transportation improvement, improvement of potable water supply, organization reinforcement, vocational training, nutrition improvement) were finally proposed. These alternatives were examined from the viewpoint of the selection criteria of pilot projects. Irrigation improvement was selected as the most essential and urgent matter for the farmers. Transport business and nutrition improvement were combined with organization reinforcement as one project.





**Figure 5.18 Location Map of Barranca-Altamira Canal, Tamayo Area**

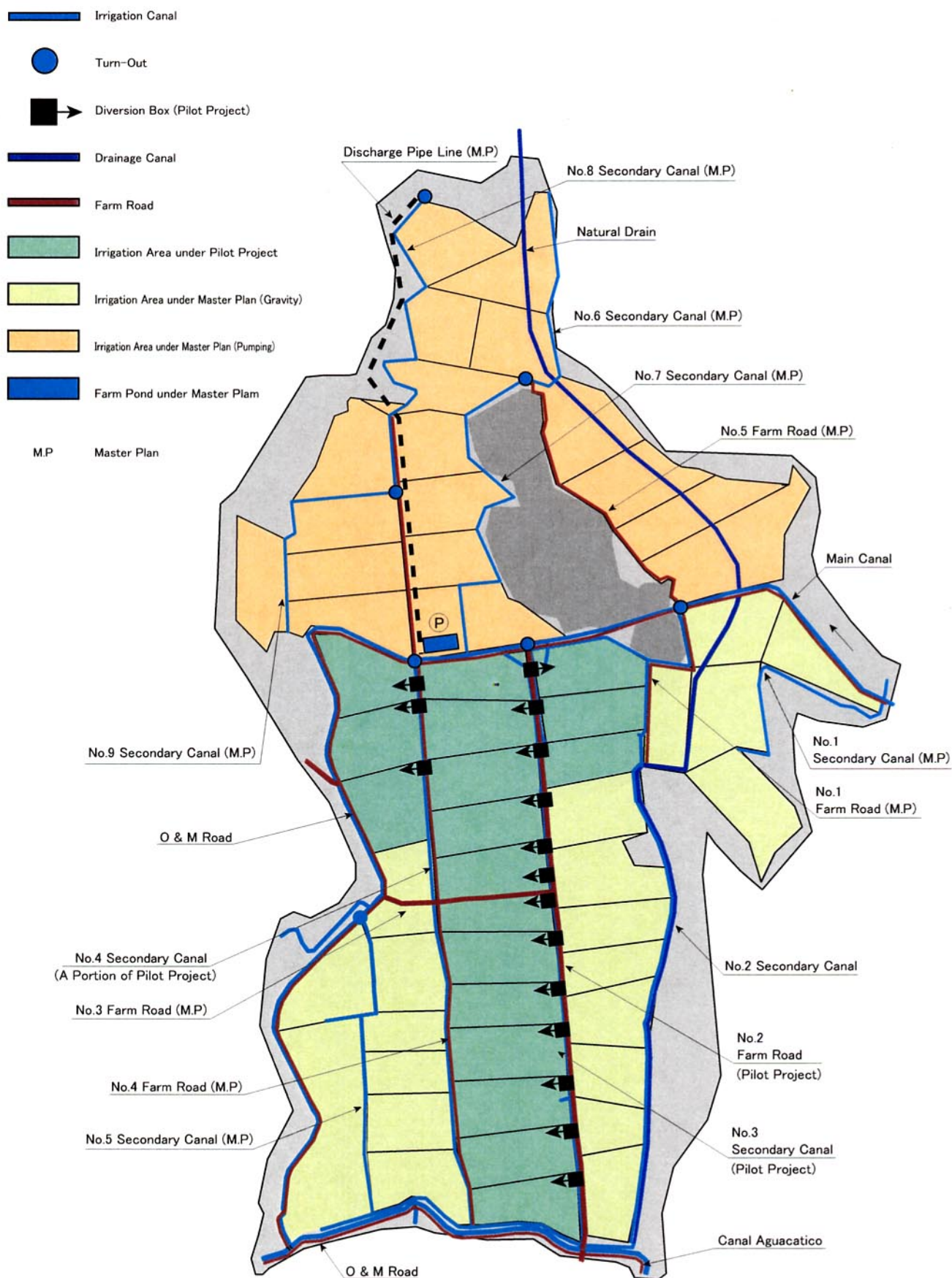


Figure 5.19 Pilot Project of Agricultural Infrastructure, Tamayo Area

### **5.5.5 Pilot Project for Agricultural Infrastructure Improvement**

#### **(1) Workshop on Set-up of the Project**

The workshops for the agricultural infrastructure improvement was carried out in the community of Los Conuquitos, Tamayo from 1 June 2002 and the major components and project design were made. During the workshops some differences were observed among the beneficiaries of the project. They didn't come to an agreement on the distribution of the watering shift and they commented that not all the farmers could use the water to irrigate their plots and that some privileges exist among farmers for the watering shift. Some of the beneficiaries of the project were concerned on what passed with them because they don't belong to La Conquista Association which is the responsible association of giving pursuit to the activities of the project. The members of La Conquista Association thought that those who didn't work should not receive benefits of the project.

#### **(2) Outline of the Project**

The pilot project for the agricultural infrastructure development at Tamayo area is located at the tail end of 15-km Barranca – Altamira canal as shown in Figure 5.18 and Figure 5.19. Contents of the pilot project were determined by the irrigation association at Lot 4 of Altamira irrigation system and the JICA Study Team.

The pilot project includes the improvement of irrigation system and farm roads: 1) improved water distribution at main canal, 2) improved farm lot intake, 3) reduced conveyance losses, and 4) improved access/farm roads to all-weathered road. The details of the pilot project components are as shown in Table 5.14.

**Table 5.14 Pilot Project for Agricultural Infrastructure at Tamayo Area**

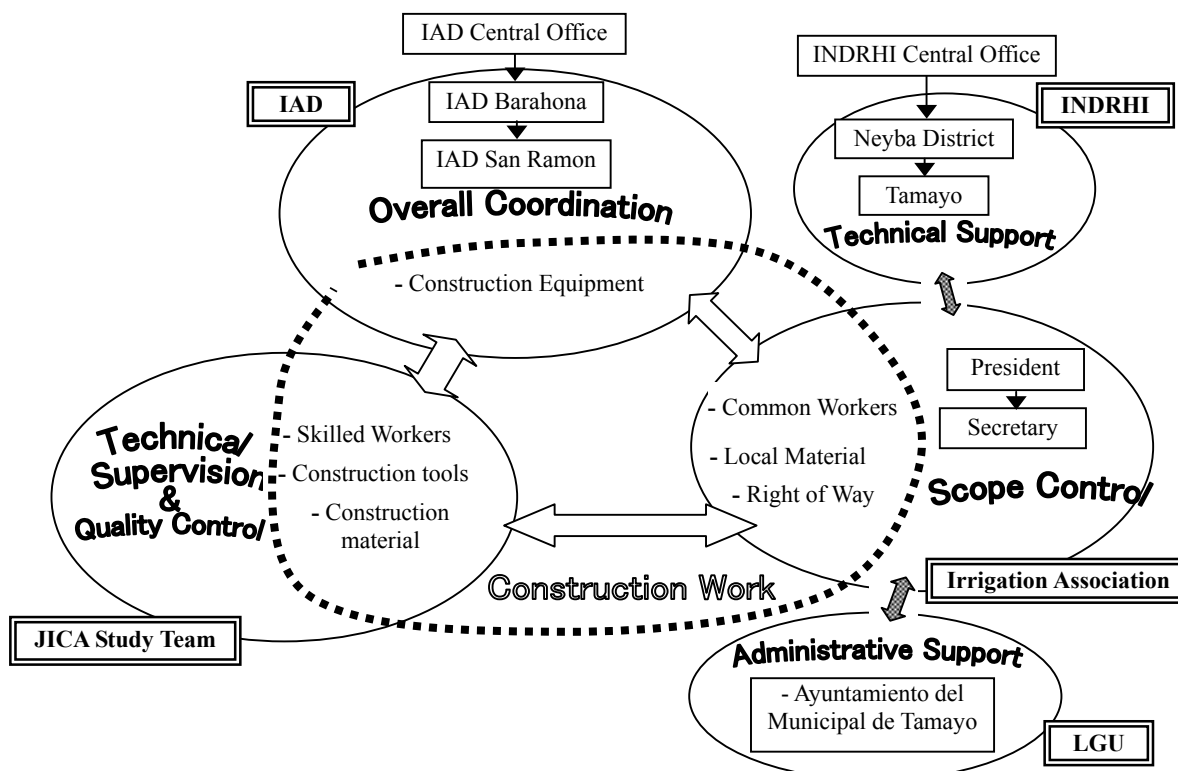
Item	Description	Quantity
1. Irrigation System Improvement		
1) Secondary Canal No.3		
- Turn-out at Main Canal	Improvement	1 no.
- Division Box	New construction	13 no.
- Block and Rip Rap Canal	Improvement	L= 900m
2) Secondary Canal No.4		
- Turn-out at Main Canal	Improvement	1 no.
- Division Box	New construction	3 no.
- Block and Rip Rap Canal	Improvement	L= 140m
3) Main Canal Crossing	New construction with pipe culvert	2 no.
2. Farm Road Improvement		
1) Farm Road	Improvement	L= 950m
2) Drainage Crossing	New construction with pipe culvert	1 no.

Related implementing bodies and their roles in the implementation of the pilot project were set as shown in Figure 5.20.

Operation of the main canal gate at Barranca – Altamira canal has been carried out by the water distributor

hired by INDRHI and under supervision of INDRHI Tamayo office. On the other hand, operation of the secondary canals in Lot 4 area particularly water distribution control is done by the irrigation association.

For the maintenance of the main canal from the intake at the Yaque del Sur River, all farmers from Lot 1 to Lot 4 conduct canal cleaning work twice a month. The irrigation association should be responsible for the maintenance of secondary canals and farm roads. Major maintenance works are: 1) canal cleaning; 2) cutting grass; and 3) repair of farm roads / O&M roads.



**Figure 5.20 Participatory Implementation Organization**

### **(3) Progress of the Project**

After the workshop held at Tamayo with the irrigation association and IAD staff on June 1st, 4th, 7th and 10th, the construction of pilot project was commenced on 17 June 2002.

Participation to the project by three main implementation bodies, i.e. irrigation association, IAD and the Study Team, was done as follows: The irrigation association prepared common workers, collected local materials such as stones for rip rap canal, and provided right-of way required for facilities. IAD San Ramon office at Tamayo directly involved in the works for coordination among all the parties including other local agencies concerned. IAD also provided construction equipment such as a dump-truck, a back-hoe and a grader. JICA Study Team participated in technical supervision and quality control, and supplied construction materials,

workers' tools and skilled workers.

### **5.5.6 Pilot Project for Cooperative Reinforcement**

#### **(1) Workshop on Set-up of the Project**

The Project Organization Reinforcement in Los Conuquitos has 2 target groups: Animals Raising (women) and Business Transportation (man). Although the components and beneficiaries of the project were divided into the two sexes, some women participated in the part of the man contributing money to buy the truck. They carried out 12 workshops of Participatory Development which are participated by members of the Association La Conquista, Association of Women La Progresista, the NGO responsible for the implementation of the project, people of the community, technicians of the IAD Barahona Regional Office and technicians of the IAD HQ.

#### **(2) Outline of the Project**

##### **1) General**

The proposed pilot project "Organization reinforcement project" has several project components such as transport business, small animal raise and etc. The project objective is to create new income generation sources besides agricultural work. Since Tamayo is the one of the poorest old sugarcane farms in the country, income generation sources are urgent. One attempt is operation of transport business for transporting directly products to markets avoiding middlemen. On the other hand, the nutrition level of children in the community is low. Therefore the idea of small animal raise are realized. This project component can be operated by women and children in their home. Surplus products can be sold in neighboring market and it means to generate new income to women in the community

##### **2) Participation**

For the commencement of transport business one truck was purchased. The cost shearing of the people was set as 30% of the cost of purchasing a truck. In this case RD\$60,000 was the target amount collected by people. The cost sharing for the animal raise was set also as 20%.

##### **3) NGO**

The management of both of the transport business and the raising of small animals was subcontracted with one NGO called as FUNDASUR which has various experiences such as water supply, housing, agriculture, micro enterprise, vocational training in the southwest region.

#### **(3) Progress of the Project**

##### **1) Transport business**

The participants of this business are mainly from the association of La Conquista, but several women paid small portion of the fund. The 19 persons paid their participation fund by 25 of July of 2002. One truck of Daihatsu was provided to the association on 5 August. The training course conducted by FUNDASUR began in August. Concerning the use of the truck several meetings were held, then the regulation of use was agreed by the participants on 5 of September. After the agreement of the regulation their business started officially. During two months up to first week of November the truck made 17 journeys to Santo Doming and several short trips to neighbor cities such as Baraona. At the result the total income was RD\$19,200 and the total expenditure was RD\$16,200 with a net surplus of RD\$3,000. They have only one driver who is the member of the association. On 15 of December 2002 the truck was stolen from where it was in the parking lot of the supermarket, while the driver and the assistant made shopping. The incident was reported to the police station, but the stolen truck did not appear. The insurance could cover only about 90% of the purchasing cost, but new vehicles became more expensive than the model of the last year.

## **2) Small animal raising**

The 36 women who confirmed the association of " Las Progresita" are participating this component of the project. A study tour to Monte Plata province was held on 31 of July in order to know some examples of animal raising and also to visit on the training course in La Luisa area. Several meetings were held in order to confirm the regulation for the animal raising before purchasing animals. The regulation was agreed within the participants on 5 of September. Animal cages were built by hands of the participants using materials provided by FUNDASUR. After several visits and analysis on local animal markets the purchasing animals began on 30 of October.

## **(4) Revise of Project Design and Actions in Project Implementation**

### **1) Transport business**

#### **a) Adjustment of the result of the incident**

After the incident of robbery, they were looking for one used truck newly in order to continue this component of the project, but it was rather difficult to find out an appropriate truck in reasonable price. Finally on 9 of May one used truck was bought and it was provided to the community on 15 of May. Because of the absence of the truck for about five months, the implementation of this component was suspended. FUNDASUR agreed on the extension of the original course period without additional expenses. The truck will be transferred officially to the community on 31 May of 2003.

#### **b) Security**

After the incident the security against robbery was confirmed among members of the association to be more carefull. One of two crews (a driver and an assistant) should stay in the truck at any time of parking.



Some countermeasure or equipment against robbery should be taken.

## **2) Small animal raising**

Same as the transport business in the case of the animal raising also the lack of the implementation plan caused operation activities without a steering.

The original idea of the animal raising was purchasing young animals and raising animals for selling or production. However they bought matured pregnant animals. They complained that the prices of animals bought were rather higher than expected prices, but from the first it was clear that pregnant animal price is higher than young animal. The workshop on the establishment of the implementation plan has been held.

## **(5) Encountered Difficulties and the Related Actions**

### **1) The share of benefit between the association and individuals**

On the way of the formation of the implementation plan the share of the benefit between the association and individual members. Since the purpose of this project is to make reinforcement of the organization, the share of the association should be enough for the growth. On the other hand women want major share for them. The several meetings were held and reached the consensus as follows.

- a) When the association buys animals, the association pays 80% of the price while the individual member shoulder 20% as the share payment.
- b) Within one year after the commencement of the animal raising when individual members sell their products, individuals get 20% of the sales amount and 80% of the sales amount should be returned to the association.
- c) After one year of the commencement when individual members get 80% of the sales amount and 20% should be returned to the association.

### **2) Resource of the fund**

Before purchasing the truck they collected money from participants for their 20%portion of the total amount. The compromised date of collection of the fund one member offered RD\$32,000almost half of the 20% portion. At that time the source of money was not clear, but on the occasion of November monitoring workshop it appeared that the source of money was the loan which interest is rather high as 8% per month. The repayment of this loan is some big share of the association expenditure. Instead of this high interest rate loan the association tried to get relatively lower interest loan from FUNDASUR and returned this previous loan of \$30,000. Because of the incident the application of loan to FUNDASUR was postponed, but on the occasion of the purchasing a truck, the application was done and it was approved.

### **3) Organization**

The people of Los Conuquitos community established the committee "Committee of Development of Los Conuquitos" which can cover whole community people on 12 August 2002. However the activity for the formation of a new organization under this committee suspended for several months. This committee can be the seed for the future organization, which will absorb the association of Conquista and the association of Progresita, and can develop to be more established organization. However, until now a new organization did not created. IAD and the Tamayo municipality should support them.

## **5.6 Evaluation of Pilot Projects**

### **5.6.1 Background**

In January 2002, the first group of pilot projects started, vocational training (sewing) and domestic water supply in La Luisa, and all the rest in June 2002. Ever since, the IAD and JICA Study Team collaborated with the four communities to implement and operate the projects. In November 2002, the mid-term evaluation was conducted. Although it was mid-term, most projects had completed their planned activities, and the stage of self-sustaining activities started afterwards. During the period from December 2002 to April 2003 in absence of the Study Team, the IAD followed up on the projects. These five months were another verification period for the Study Team to examine whether and how the IAD and the communities could work together to sustain and even expand the positive impact of the projects. And the Final Evaluation was conducted in May 2003.

### **5.6.2 Overview**

The hypotheses verified in the pilot projects are described in 5.1. Evaluation of the pilot projects is conducted, lessons for vertical and horizontal extension are learned at the individual project level, and recommendations are made for the implementation of the Master Plan. In addition, the achievement of the project plan is also evaluated. In sum, the following three types of evaluation are conducted.

- 1) Evaluation of outputs and impact of pilot projects (Plan Achievement)
- 2) Lessons on methods and limitations of implementing the Master Plan and its projects, which are learned through the process of implementing pilot projects (Horizontal Extension).
- 3) Lessons on outcomes about capacity building and organization strengthening, which are learned through the process of implementing pilot projects (Vertical Extension).

Results of the evaluation by project are summarized in Table 5.16 to 5.26. Each evaluation summary table consists of the following parts.

- 1) Project Summary: a concise version of a Project Design Matrix (PDM), indicating planned Project Purpose and Outputs.



- 2) Project Activities: a record of who took what activities, and how.
- 3) Project Evaluation: six evaluation criteria, which are described below.
- 4) Lessons and Recommendations by Actor: opinions of the stakeholders expressed in workshops.

Plan Achievement is evaluated with the criteria 1) to 5) below. 5) Sustainability is also an important criterion for checking Vertical Extension. 6) Replicability has implications for Horizontal Extension.

- 1) Efficiency: how efficient the Input is converted into Outputs
- 2) Effectiveness: whether the Project Purpose is achieved, and how much the Outputs contribute to that achievement
- 3) Relevance: how valid and relevant is the Outputs and Project Purpose are at the time of evaluation
- 4) Impact: what type of change, both positive and negative, takes place either directly or indirectly as a result of the project
- 5) Sustainability: how much positive impact of the project can be sustained by the beneficiaries in collaboration with the IAD and other institutions including NGOs after the project is finished.
- 6) Replicability: whether and how easy the IAD can carry out similar projects in another area in collaboration with beneficiaries.

Criteria 1) to 3) are evaluated with a five-point grade, five being the best. Three points indicate that the project achieve what it plans. As for Sustainability, three points mean that the current development impact can be sustained, whereas four points mean it will further develop with some outside support, and five points show that it will further develop with little outside support.

### **5.6.3 Evaluation of Plan Achievement**

The following table shows the results of the evaluation of Plan Achievement. As for Efficiency, almost all the pilot projects have achieved their Outputs. Those projects that have produced more outputs for the input than planned include the Sewing Course (Micro-enterprise Creation Project), Domestic Water Supply Project, and Marketing Capacity Strengthening Project. The difference is attributable mainly to the achievement of the Output of organizing beneficiaries as all the projects attempted to do so. It is noted that the Business Transport Project in Tamayo cannot be evaluated because the truck was stolen.

**Table 5.15 Evaluation Results of Plan Achievement**

	<b>Efficiency</b>	<b>Effectiveness</b>	<b>Relevance</b>	<b>Sustainability</b>
<b>La Luisa</b>				
Sewing	4	4	4	4
Cooking	4	4	3	3
Computer	3	3	2	3
Domestic Water Supply (Well)	4	5	5	4
Health Education	4	4	4	4
<b>Tamayo</b>				
Irrigation Improvement	3	4	5	3
Small Animal Raising	3	3	3	3
Business Transport	-	-	2	-
<b>Esperanza</b>				
Marketing Capacity	5	5	4	4
<b>Los Hatillos</b>				
Land Use Planning Support	4	4	4	3
Water Use Improvement	4	4	4	3

Most projects also have achieved their Project Purposes. Those projects that have outperformed in this respect are the Sewing Course, Domestic Water Supply, Marketing Capacity, and Irrigation Improvement. In the sewing course, there are three women who graduated and gained employment, and there is a movement in the community to launch a small micro-enterprise. The two other Micro-enterprise Creation projects with the same purpose, namely cooking and computer, have not achieved neither employment nor self-employment. The basic knowledge taught in the Computer Course in particular is found insufficient to gain employment in rural areas.

Most projects score three points or higher on Relevance. The Computer Course, however, is graded below average. Although the community's demand is high, it cannot be regarded appropriate for rural development, particularly for helping the beneficiaries to gain employment or create a new business. Likewise, although the community wants a truck very much, it may not be used to a full extent as the size of the target group is too small. It might have scored better in a community like Esperanza where farmers produce enough agricultural products to transport. In other words, their scores on Relevance are relatively low because the Computer Course is not consistent with the strategy of rural development, and the Business Transport is not designed well particularly in terms of the use of the truck and conditions where it is implemented.

With regard to Sustainability, four projects are found to be able to sustain the current development impact, three are expected to development further with some outside support, and three are regarded difficult to sustain the positive impact. The last three projects include (1) ones that require a rather large cost for maintaining the machineries, i.e. Cooking and Computer, and (2) one where it is difficult for the farmers to use the land use plan, that is, to start demonstration farms, for the farmers cannot afford financially, i.e. Land Use Planning Support. On the other hand, in the three projects that score four points, i.e. Sewing, Well, and Marketing Capacity, "vertical extension" has already taken place. In the Sewing Course, some beneficiaries have started to sell clothing and other products made with manual sewing machines. In the Domestic Water

Supply Project, one well user association has been incorporated and begun activities for income generation, namely livestock. In Marketing Capacity Project, the group has collected money to purchase a tractor and started to cultivate pigeon peas together.

#### **5.6.4 Verification of the Hypothesis on Horizontal Extension**

##### Hypothesis

People from the same area or another see a project and start a similar project with their own initiative

##### Findings

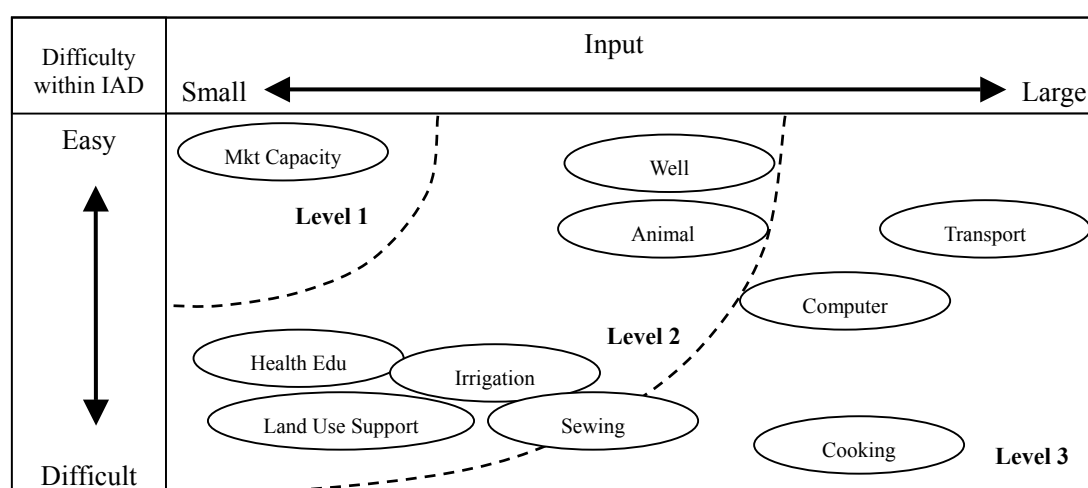
- Farmer-to-farmer horizontal extension between areas is very difficult. The distance between two settlement areas is usually long, and support and intervention of the IAD is indispensable.
- Farmer-to-farmer extension is effective for horizontal extension within an area, but such extension was not very successful for the lack of an extension plan.
- An entry project for horizontal extension within an area should be regarded “pilot” and can be effective only when there are clear strategies and plans to extend the project throughout the area.
- In order to extend a project within an area, it is necessary to make a rough plan for the entire area. A project must be launched with an overall area in mind, and the project should be considered a “seed” for other people in the area to follow and emulate.

Replicability is not scored, but analyzed at which of the following three levels, a similar project can be implemented. Replicability will be also explained later in “Horizontal Extension.”

Level 1: Technicians of the IAD can implement the project.

Level 2: Directors of the IAD needs to make decisions, and other institutions also need to cooperate.

Level 3: Input required for the project is large, and a large sum of fund is necessary in addition to inter-institutional coordination, including NGOs, other than the IAD. It is also desirable to obtain cooperation from international assistance agencies.



**Figure 5.21 Pilot Projects and Levels of Replicability**

Next, each individual pilot project will be examined for future application and replicability, and recommendations are made regarding methods and procedures for implementation in other areas.

#### Micro-enterprise Creation Project (Vocational Training of Sewing, Cooking, and Computer)

In these pilot projects, the rural poor (1) acquire skills through vocational training and (2) become organized so that they can either (3) obtain jobs or (4) start up a new business, i.e. establish a micro-enterprise. After the completion of the pilot projects, it has been found that some achieved (3), but (4) was not so successful despite an encouraging sign among some participants.

For horizontal extension of vocational training, it is almost impossible to start vocational training by the initiative of rural people, and intervention by the IAD and coordination with other institutions are necessary. This is because the IAD does not have experts who can teach vocation skills and has no choice but rely on teachers dispatched from other institutions like INFOTEP.

#### Domestic Water Supply Project

In this pilot project, well drilling works were contracted out to a private company, but the IAD is expected to be able to undertake such construction work by themselves with the machines, which are expected to be procured under a grant aid project by the Government of Japan. The pilot project can be a perfect model of horizontal extension in terms of organizing people to create a well user association, establishing operation rules, and maintaining the well.

#### Health Education Project

At the beginning of the project, the motivation of the beneficiaries was very low probably because they did not understand the correlation between health problems and water problems. Although the IAD and NGO

had workshops to strengthen the organization and raise their motivation, the biggest incentive for them was to see actual results. These organizational activities can be carried out by the IAD. Moreover, those IAD technicians who worked with NGO and successfully built their capacities can be a key person to implement similar projects. However, if current situation analysis requires medical examinations or water quality analysis of bacteria before starting health education, it is necessary to coordinate the project with SESPASS or INAPA.

#### Irrigation Facility Improvement Project

Since the target group of the project was well defined, new projects began to diffuse outside the pilot project site. The organization of the project, La Conquista, had already existed before and was based on agricultural land. Horizontal extension can take place in Tamayo because the pilot project was planned to carry out improvement work in part of the entire site of La Conquista under an implicit agreement that all the members were supposed to receive some benefits in future.

The implementation of similar projects would require the IAD to coordinate the work with INDRHI, which manages irrigation water. Such simple improvement work as carried out in this pilot project can be also done by the IAD in collaboration with farmers. In order to carry out the work, however, it is necessary to take some measure to reduce the cost for the IAD, for example, by sharing the project cost and asking for unskilled labor from direct beneficiaries who own the land that will be improved.

#### Business Transport Project

This project finished with little verification results because the truck bought in the project had stolen. However, it can be supposed that because of the large input of a truck, horizontal extension is a little difficult either within an area or between areas. It is even difficult for the IAD to implement this project, not to mention beneficiaries alone. Since effects of the project are not clear yet, it cannot be easily recommended to start another similar project.

It was later found that the project site did not have sufficient needs to transport agricultural products, and thus it might have been necessary to implement the project in an entire area or even together with other areas. However, because the project started with the target group consisting of farmers based on a limited area of farmland, the size of the beneficiaries were too limited, so was the use of the truck.

#### Animal Raising Project

This project should be able to be extended horizontally. However, as discussed in the next section of Vertical Extension, in implementing a similar project that aims at strengthening an organization, it is recommendable to have the beneficiary group to manage animals collectively. Collective management can allow the beneficiaries to be united, share knowledge and skills, and also protect animals from thieves.

It is possible for the IAD to carry out a similar project with people since the IAD has some livestock experts. Purchase of animals can be made through different options, such as a subsidy from the IAD or grants from NGO.

#### Capacity Strengthening of Marketing Activities Project

IAD technicians can implement similar training courses. There are three important conditions: (1) effective teaching methods to facilitate understanding of the participants; (2) a minimum level of agricultural infrastructure; and (3) a minimum literacy level.

#### Land Use Planning Support Project

It is difficult for the IAD with the current expertise to implement soil analysis and land use planning such that were formulated in the project. It is necessary to coordinate the work with SEA. However, the IAD can carry out demonstration farms the project attempted. Since such is an income generation project, and the budget of the IAD is limited, it is necessary for the IAD to require an adequate size of cost to be shared by farmers.

#### Water Use Improvement Project

Like the Health Education Project in La Luisa mentioned above, the IAD technicians who experienced these two projects are capable of carrying out health education campaigns. If the project requires more technical analyses, SESPAS or INAPA also needs to participate in the project. This project was successful in diffusing the knowledge and skills of water treatment and use among women groups and reducing water-related diseases.

### **5.6.5 Verification of Hypothesis on Vertical Extension**

#### Hypothesis

Direct beneficiaries use the lessons learned in a project to launch another project or a new development process

#### Findings

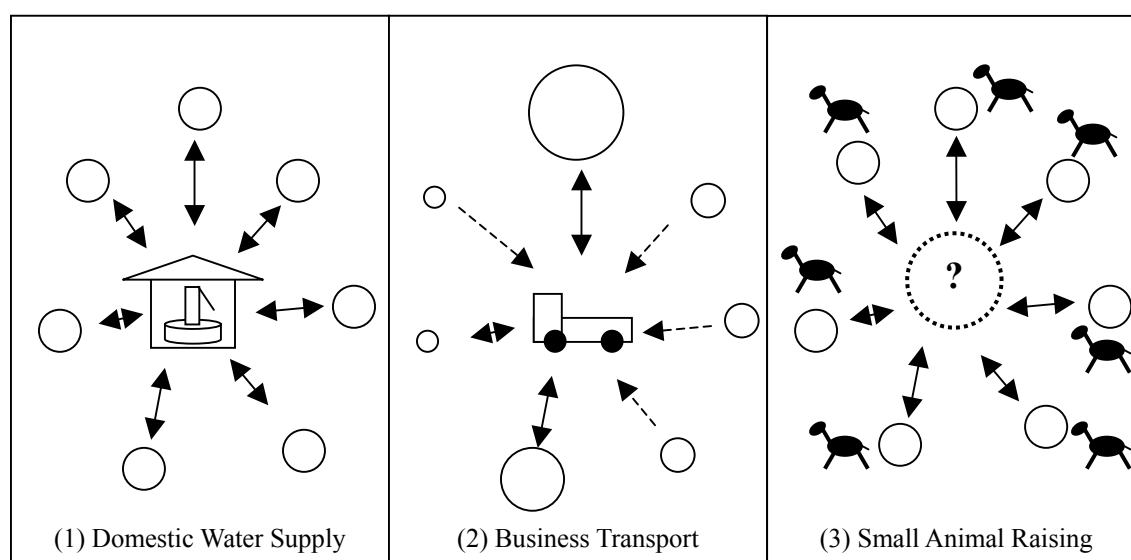
Vertical extension means that an organization and individuals that participated in a project use that experience for future. This requires capacity building of individuals, especially leaders, and strengthening of the organization. In the Study, some pilot projects were successful in strengthening the organizations and leading to a new development process, and some were not.

In considering project implementation by the IAD, it is necessary to incorporate in project design mechanisms for capacity building and organizational strengthening. The following section will discuss lessons from the pilot projects and make recommendations for vertical extension.

### Conditions for Organizational Strengthening

Good examples of capacity building and organizational strengthening are the Domestic Water Supply Project in La Luisa and Capacity Strengthening of Marketing Activities Project in Esperanza. The following figure shows (1) Domestic Water Supply as a good example and (2) Business Transport and (3) Animal Raising as examples of not achieving the results as expected.

An analysis of success elements of (1) finds that incentives were significant for the beneficiaries to manage the well collectively as everyone needs water. It was a project for basic human needs. There were other factors in the process of organizing the beneficiaries. First, there was little difference or partiality among the members of the well user association between the cost, or responsibility, (cleaning, maintenance fee, etc.) and the benefit (domestic water). Moreover, rules of collective operation and management were very clear. In order to protect “our” own well, the members meet regularly and take actions together.



**Figure 5.22 Mechanisms for Organizational Strengthening in Three Pilot Projects**

On the other hand, in (2) Business Transport, despite the incentive to manage the truck collectively, the responsibilities (cost sharing of the truck purchase) and benefits were not well balanced, and there was a big gap in motivation among the members. For instance, one member provided a half portion of the entire cost the beneficiaries were supposed to bear in order to purchase the truck. It seems that he was willing to pay an extremely high portion because he was the only driver in the group and in a position to control the group activities. In contrast, benefits of other members were ambiguous and unclear, and some of them just put their names on the list.

The Small Animal Raising Project accepted the beneficiaries’ desire to manage animals individually, rather than collectively, and there were fewer opportunities for the group to work together. In other words, there

was a lack of mechanism for people to recognize themselves and work as a member of an organization. Since the project does not make it hard for people to join the group, i.e. low cost sharing, some members were enthusiastic, and some were not. The subsidy rate for buying animals was set at 80 percent. In other words, if one pays 20 percent, anybody can buy animals. Moreover, animals they bought were pregnant and ready to give births. This type of project design clearly allowed those who thought the project was “easy money” to join the project.

The analysis above can be summarized into conditions for organizational strengthening as follows.

- Incentives and mechanisms are in place for members to work as part of a team.
- Costs (commitments to the team) and benefits are well balanced among the members.
- Responsibilities of each member are clearly defined.
- Rules for project operation are clear.
- An entry to the project is relatively difficult, and participants are enthusiastic and motivated.
- Ownership of the project is established as each member bears her share of the project cost.



**Table 5.16 Vocational Training (Sewing Course) Project in La Luisa**

(1) Project Summary						
Project Purpose	People gain jobs, either employed by others or self-employed, with the sewing skills.					
Outputs	A training center to provide courses is ready.	Sewing courses are available.	People are organized.	Trainees learn how to sew.		
(2) Project Activities						
Time	Activities	Com	IAD	NGO	JST	Comments
Jan. 2002	Established a committee.	X	X	-	X	17 students in Prieta and 16 students in El Batey formed a committee separately in each community.
	Designed the course contents	x	x	-	X	
Feb.	Basic course started	X	-	X	-	Taught basic skills of sewing.
May	Basic course completed.	X	-	X	-	16 out of the 17 students graduated in Prieta, and all the students in El Batey.
Jun.24	Advance course started.	X	-	X	-	The course icluded not only techniques of the dressmaking but also the lessons of marketing, accounting, human relationship, and the investigation tour on examples of micro-enterprises.
						15 students in each community of Prieta and El Batey attended the course.
Sep.18	Advance course completed.	X	-	X	-	
Nov	Mid-term evaluation	X	X	-	X	
Dec.-	Follow-up activities	X	X	-	-	IAD followed up on NGO's program, especially business component.
Apr. 2003						
May	Final Evaluation	X	X	X	X	

\*Degree of participation by actor: X = high, x = some, - = low.

Com.: sewing committee. NGO: Promapec. JST: JICA Study Team.

(3) Project Evaluation		
Criteria	Score	Comments
Efficiency	4	-Most of the planned outputs have been produced with reasonable inputs. It was most difficult to organize people. Taking the courses together did not guarantee that the students were motivated to organize themselves and work together.
Effectiveness	4	-Three trainees in Prieta have already obtained jobs, and another three formed a group to establish a small business to make clothing and others for sale. It still remains to be seen whether the others gain jobs.
Relevance	4	-The community did and still does want the project. Simple sewing skills (with domestic machines) helped the community to gain supplemental incomes but probably could not be a main source of income for a family. -Although the project taught how to use industrial sewing machines, it was a little too advanced and expensive for the community to sustain.
Impact	-	-Some students have gained strong confidence and changed their attitudes to become more independent.
Sustainability	4	-The trainees will be able to maintain the sewing knowledge and skills, and some of them will use them to raise their income. However, other people will not be able to gain similar skills from the trainees, and thus the project impact cannot be extended horizontally.
Replicability	Lv.2	-Training with domestic machines is replicable given the low cost of material input, but coordination with other institutions (INFOTEP or NGO) is necessary.
(4) Lessons and Recommendations by Actor		
Actors	Lessons and Recommendations	
NGO	-Student should have been selected more carefully. -“Self-reliance” courses should have been provided. -Course contents should be considered to reflect the labor market. -More time was necessary for the students to gain sufficient skills to create micro enterprises.	
Study Team	-It was difficult to achieve two different purposes, to acquire sewing skills and gain employment, within one year. -Students should have been selected more carefully if the project had attempted to create a micro-enterprise. It was a little too ambitious for novice students to learn how to sew, organize themselves, and create a micro-enterprise. -	

**Table 5.17 Vocational Training (Cooking Course) Project in La Luisa**

(1) Project Summary						
Project Purpose	People gain jobs, either employed by others or self-employed, with the cooking skills.					
Outputs	A training center to provide courses is ready.	Training courses are available.	People are organized.	Trainees learn how to cook.		
(2) Project Activities						
Time	Activities	Com	IAD	NGO	JST	Comments
Jun. 2002	Established a committee.	X	X	-	X	
Jul.	Selected students.	X	X	-	X	15 students in El Batey and 15 in El Laurel.
	Paid a quota.	X	X	-	x	Paid RD\$100 per student.
	Designed course contents.		-	x	X	
Jul 25	Basic course started.	X	-	X	-	The course taught basic knowledge and skills of cooking.
Sep.	Basic course completed.	X	-	X	-	
Nov.21	Advanced course completed.	X	-	X	-	The course included lessons of marketing, accounting, human relationship and investigation tour.
	Mid-term evaluation workshop	X	X	X	X	
Dec.-	Follow-up activities	X	X	x	x	IAD followed up on NGO's program, especially business component.
Apr. 2003						
May	Final evaluation	X	X	-	X	

\*Degree of participation by actor: X = high, x = some, - = low.

Com.: Cooking committee. NGO: Promapec. JST: JICA Study Team.

(3) Project Evaluation		Comments	
Criteria	Score		
Efficiency	3	-The training courses were provided, and the students gained some cooking skills. However, organizing people to the extent that they would be motivated to work together to create a micro-enterprise was very difficult given the limited time and effort for that component.	
Effectiveness	3	-There are some encouraging signs. In El Laurel, 10 out of 15 students formed a group to start a small restaurant, but they are incurring a net loss because of poor bookkeeping. In El Batey, two students have started to sell some simple food. Their profits are still small, but they are very happy about their businesses. No students have gained jobs outside the community though some have strong wills.	
Relevance	3	-The community has definitely a high demand for cooking skills, but it is not clear the training is good for gaining jobs. A training program with simpler equipment may be more appropriate for rural communities. -There is another possibility that the cooking course can be combined with a nutrition program, instead of aiming at income generation.	
Impact	-	-Some students have gained strong confidence. In El Laurel, people have become united more and motivated to work together.	
Sustainability	2	-The cooking equipment used would probably be too expensive and difficult for the community to maintain.	
Replicability	Lv.3	-It is more difficult, compared to the sewing course, to carry out similar cooking courses in other communities. Required equipment is more expensive. Demand for such business is limited within a rural community, and sales to outside would require specific conditions, such as a good location along a major road.	

(4) Lessons and Recommendations by Actor

Actors	Lessons and Recommendations
NGO	<ul style="list-style-type: none"> <li>-More time was needed to organize people and also to acquire cooking skills.</li> <li>-It was too ambitious and too short the time for students to learn how to cook, organize themselves, and gain jobs or start business.</li> <li>-Having two different trainings (sewing and cooking in Batey) together in one room made it difficult to carry out the classes because of the limited space available. Most students did not have previous experience.</li> <li>-It was difficult to provide trainings to illiterate students. Maybe the State Secretary of Education could provide a literacy program.</li> <li>-It was doubtful whether the level of training was appropriate for the infrastructure of the community. It was difficult to carry out the training with not enough electricity and water.</li> <li>-The contents of the course should have included pastry and bakery because they have more demand.</li> <li>-Courses on self-reliance should have given beforehand.</li> <li>-The course was good but required more time to achieve what we tried to. One year would be necessary.</li> </ul>
Study Team	-It was too ambitious to complete the whole of process where students who had no previous knowledge on professional cooking or hardly knew each other (1) acquire skills, (2) organize themselves, and start a micro enterprise. It might have been necessary for a pilot project to focus on one of these two aspects, that is to verify (1) appropriate contents of the course for novices or (2) appropriate training of those who have had some experience in cooking to organize themselves and start new business together.

**Table 5.18 Vocational Training (Computer Course) Project in La Luisa**

(1) Project Summary						
Project Purpose	People gain jobs, either employed by others or self-employed, with the computer skills.					
Outputs	A training center to provide courses is ready.	Training courses are available.	People are organized.	People learn how to operate computers.	Community information centers are established.	
(2) Project Activities						
Time	Activities	Com	IAD	NGO	JICA	Comments
Jul. 2002	Established a committee.	X	X	-	X	The organization consisted of students from the four communities of La Luisa. RD\$100 per student.
	Paid the quota.	X	X	-	x	
	Selected students.					
	Designed course contents.	-	-	X	X	
Jul. 26	Basic computer course started	X	-	X	x	10 students attended the class from the four communities of La Luisa. 8 students continued attending this latter half of the course, which taught applications of computer in business. They paid RD\$500 for the course.
Oct.	Advanced course started.	X	-	X	x	
Nov.	Mid-term evaluation workshop	X	X	-	X	
Dec.	Computer course completed.	X	-	X	x	
	Graduation ceremony	X	X	X	X	
Dec.-	Follow-up activities	X	X	x	x	A community leader started to teach others. She teaches 22 students in 3 groups. All of them paid a quota.
Apr. 2003						
May	Final evaluation	X	X	-	X	

\*Degree of participation by actor: X = high, x = some, - = low.

Com.: computer committee. IAD HQ: Headquarter Santo Domingo. IAD Gr: Regional Office in Mao. NGO: Boston Institute. JST: JICA Study Team.

(3) Project Evaluation			Comments
Criteria	Score		
Efficiency	3		-Most planned outputs have been yielded. Two persons dropped out from the first phase of the course, but none in the second phase. The organization remains weak even after the project completed.
Effectiveness	2		-The prospects seem very low for the students to gain jobs as a result of the course.
Relevance	2		-Relevance of the project for rural community development is low although the community has definitely a high demand for the project.
Impact	-		-Compared to sewing or cooking, it is much more difficult to gain jobs with the computer skills they gained in the course.
			-Three community leaders have emerged and started to teach others how to operate computer.
Sustainability	2		-Despite strong interests of some leaders, the deficient infrastructure and the lack of experienced personnel will probably make it difficult to operate and maintain the computers even though each community obtains a computer and establishes an information center.
			-Outside support is still necessary to keep the computers operational.
Replicability	-		-Since the computer training does not help people gain jobs and promote development in rural communities, it is not recommendable to replicate the project in other communities.
(4) Lessons and Recommendations by Actor			Lessons and Recommendations
Actors			
NGO			-It was difficult to carry out the course due to the lack of basic infrastructure, namely electricity and telephone. -Could not teach the internet component for telephone service was unavailable. We tried to bring students to Santo Domingo (one-hour bus ride), but students could not because they could not pay the toll. -The students should have a basic level of education, so the class maintains an appropriate level. -Training should be made in group development before beginning a project like this.
Study Team			-The target and purpose of the course should have been clear. The project purpose was a little too ambitious for students with no previous knowledge on computer. Knowledge of the students varied a great deal, which made difficult to achieve the project purpose.

Table 5.19 Domestic Water Supply Project in La Luisa

(1) Project Summary						
Project Purpose	People get potable drinking water.					
Outputs	People are organized.	The registration fee is paid.	The well is constructed.	The well is maintained.		
(2) Project Activities						
Time	Activities	Assoc.	IAD	PC	JST	Comments
Nov. 2001	Selected the project Established an association.	X	X	-	X	In participatory workshops, people agreed on their responsibilities in the project.
Jan. 2002		X	X	-	X	Social Development Department played a main role in organizing people. They agreed on cost sharing (RD\$500/family). Each well association chose five officers.
	Kick-off workshops	X	X	-		Social Development Department helped the beneficiaries to make PDM and PO.
	Selected a site.	X	x	-	X	Beneficiary groups provided land for drilling wells.
	Cleared and secured access roads.	X	-	-	-	Access road for the construction vehicles.
Jan.-Mar. Jul.-Aug.	Collected cost sharing money.	X	X	-	x	They agreed that the construction would not start until the cost sharing money was collected. Most of them paid it within a month.
	Constructed six wells. Constructed two wells.	-	-	X	x	The JICA Study Team contracted the work out to the contractor. It also supervised the construction work to make sure that the beneficiaries were involved in the process.
	Constructed a pump house.	X	-	x	X	Putting this responsibility in the hands of people helped to strengthen a sense of ownership among them. The Study Team supervised the work.
	Started operating the well.	X	-	-	-	Each association meets regularly (once a month) and collects maintenance costs (RD\$5 per month). IAD regularly followed up on activities of the associations.
Nov.	Mid-term evaluation workshop	X	X	-	X	All the seven wells were found to be kept in good conditions. Some groups encountered problems (water flavor, hand-pumps, etc.), they coped with them well.
Dec.- Apr. 2003	Follow-up activities	X	X	-	-	Technicians of IAD visited the communities to check the group activities and conditions of the wells.
May	Final evaluation	X	X	-	X	

\*Degree of participation by actor: X = high, x = some, - = low.

Assoc: Well users' association. PC: Private contractor. JST: JICA Study Team.

(3) Project Evaluation

Criteria	Score	Comments
Efficiency	4	-Although the wells constructed in the project are more expensive than the existing hand-drilled wells in the community, the outputs produced by the project are worth the input. The well associations have become united and very strong as a result that the members worked together.
Effectiveness	4	-All the seven well associations now have an excellent access to potable water.
Relevance	5	-Gaining an easy access to safe water is indispensable for the community. People used to walk a long distance to fetch water, spend a lot of money to buy water, or suffer from unsanitary conditions.
Impact	-	-As a result of working together as a group, one well association decided to take further steps to become a legal entity. They wished to start some development activities for the community, using the well association as a basic unit.
Sustainability	4	-A good mechanism is in place to maintain the wells. The members collect money for maintenance. -A sign of starting a new development process has also emerged. There is a movement among the beneficiaries to form a federation of the existing well associations in La Luisa in order to share information and experience and cope with the problems collectively.
Replicability	Lv.2	-The project is highly replicable. The entire project process could be a model for the IAD to construct a well in rural communities.

(4) Lessons and Recommendations by Actor

Actors	Lessons and Recommendations
Committee	-We learned that it was good to associate ourselves. -We learned that it was important for us to contribute our part for the project. -We learned that it was important to maintain the well in good conditions.
IAD	-The project was very successful because (1) it was what they needed, (2) all the members agreed and were willing to participate, and (3) the rules were very clear.
Study Team	-People were willing to pay their share of the project cost if they saw clear benefits for them. -Sparing enough time before the construction to fulfill group responsibilities allowed the beneficiaries to learn how to work together as a group. -Involving people in the process during the construction helped them gain a sense of ownership. -Although it was first thought that there was not enough time for organizing the beneficiaries, the newly established committees began to function well as an organization. This was probably because those members shared a very clear objective and regularly engaged in group activities. Responsibilities of each member were clearly defined as well, which helped the members to work on behalf of the whole.



Table 5.20 Health Education Project in La Luisa

(1) Project Summary	
Project Purpose	People drink potable water.
Outputs	People are organized.
People gain knowledge on how to treat water.	

(2) Project Activities						
Time	Activities	Com	IAD	NGO	JST	Comments
Jun. 2002	Established a committee	X	X	x	X	Established a health committee in each community
Aug.	Conducted a diagnostic study.	X	-	X	-	1) Interviews with focal groups as well as individuals, 2) observation of houses and wells, 3) water quality analysis, and 4) medical examinations of women.
	Self-esteem workshops	X	x	X	-	To motivate people to participate more actively in the project.
	Shared the results of the analysis	X	X	X	-	
Sep.	Health education seminars.	X	X	X	-	
	Formulated an action plan.	X	x	X	-	
Oct.-Nov.	Conducted campaigns.	X	x	X	x	Workshops were held, followed by house visits with brochures and stickers. They also implemented fumigation.
	Mid-term evaluation workshop	X	X	X	X	Health committees of the four communities joined and began some activities together.
Dec.-Apr. 2003	Follow-up activities	X	X	x	-	
May	Final evaluation	X	X	X	X	

\* Degree of participation by actor: X = high, x = some, - = low.

Com: health committee. NGO: CEDEE. JST: JICA Study Team.

(3) Project Evaluation		
Criteria	Score	Comments
Efficiency	3	-Many participants took advantage of the project and gained knowledge and skills related to sanitation, plague controls, and others. Others were less enthusiastic, and thus the outputs produced were not so significant. The component of organizing people was a little weak and insufficient, which later adversely affected the dissemination of knowledge to other members.
Effectiveness	3	-It still requires more time and efforts to get to a point where all the people in the community can use water in a hygienic manner as a result of the project.
Relevance	4	-The project scope and purpose are consistent with the communities' needs. People had various health problems that can be prevented with a basic knowledge on health.
Impact	-	-A few participants were very interested in the subject and proposed to form a committee to integrate the health committees of the four communities in La Luisa, but this movement was limited to a few members only.
Sustainability	3	-The Health Teams are now organized to take initiatives in practicing what they learned in the project. For example, they began to clean garbage in the community, teach others for sanitary use of water, etc. -There is a good sign that some of the Health Team members are more motivated to take collaborative works across the four communities. Although it is not clear how sustainable this organization is, it can have greater impact if the IAD continues its support and follow-up activities at the level of technicians even with low material input.
Replicability	Lv.2	With the knowledge and expertise of the NGO transferred to the IAD, the IAD could implement similar project with low cost. It would require more cost and coordination with other institutions like SESPAS/INAPA if medical examinations and/or bacteriological water quality analysis are necessary.
(4) Lessons and Recommendations by Actor		
Actors	Lessons and Recommendations	
NGO	<ul style="list-style-type: none"><li>-The role of IAD was not defined clearly.</li><li>-It was too ambitious to achieve what the project attempted. The project period was too short to organize people and disseminate information and knowledge of health.</li><li>-The project could achieve its purpose to some extent because we worked with the existing organizations and leaders.</li><li>-It was a good idea to form a small group (7-14 members) as a focal point within a community and disseminate knowledge from it.</li><li>-The burden on the community leaders was large because they also participated in other activities.</li><li>-There was a lack of coordination with other projects, and our activities sometimes had to be cancelled.</li><li>-It was difficult to communicate with the IAD.</li><li>-Interests in the project in El Laurel were very high, and the organization was strong, which made the project more effective than the others.</li><li>-In La Luisa Prieta, some people were illiterate, but the skit plays and other methods were very effective to convey the messages.</li><li>-People in El Batey were so dependent on outside assistance that their initiatives were weak.</li><li>-It is questionable whether the monitoring team that were not involved in the implementation process conduct monitoring and evaluation. Implementation and evaluation should be done by the same group of people.</li></ul>	
Study Team	<ul style="list-style-type: none"><li>-This project is a type of service usually provided by the government, and the level of participation is lower compared to projects such as income generation. More interventions are thus justified and necessary on the part of outsiders, namely IAD or NGO.</li></ul>	

**Table 5.21 Agricultural Infrastructure Project in Los Conquistos**

(1) Project Summary							
Project Purpose	Farmers get more water for irrigation.						
Outputs	We are organized.			The canal is repaired.			
The canal is maintained.							
(2) Project Activities							
Time	Activities	FG	IAD HQ	IAD Gr	IND RHI	JST	Comments
Jun. 2002	Kick-off workshops	X	X	X	-	X	It was first difficult to decide responsibilities of the farmers.  The Study Team contracted out the work to a private company. IAD could also do the work by itself [Farmers] provided common labor and local materials. [IAD] provided construction equipment. [INDRHI] provided technical support. [JICA] provided technical supervision, quality control, skilled labor, and construction tools and materials.
	Designed the construction work	X	-	x	-	X	
	Conducted a topographic survey.	-	-	-	-	X	
	Started the construction.	X	X	X	-	X	
Aug. Nov.	Finished the construction. Operation and maintenance	X	-	x	-	-	Monthly by the farmers.
	Mid-term evaluation workshop	X	X	X	-	X	The beneficiaries presented the results of the project and discussed future actions necessary to solve the problems at that time.
Dec.- Apr. 2003	Follow-up activities.	X	x	X	-	-	Farmers demanded cements from IAD so that they could continue repairing the canal. IAD provided 60 sacks of cement in response. The work did not start, however, because the farmers did not have a means of transporting cements or skilled labor. They were still waiting for the outside to fill their gap.
May	Final evaluation	X	X	X	-	X	

\*Degree of participation by actor: X = high, x = some, - = low.  
FG: Farmers' group ("La Conquista"). JST: JICA Study Team.

(3) Project Evaluation			Comments
Criteria	Score		
Efficiency	3		<ul style="list-style-type: none"> <li>-(1) It was very difficult to organize people for the work. Some of the direct beneficiaries did not participate at all. (2) Improvement work of the canal within the project scope has been completed. (3) The community carries out maintenance works once a month.</li> </ul>
Effectiveness	4		<ul style="list-style-type: none"> <li>-A major part of the canal has been improved, and the farmers are now able to get water easily and efficiently through improved canal system.</li> </ul>
Relevance	5		<ul style="list-style-type: none"> <li>-The canals and farm roads were indispensable for the community to reclaim the uncultivated land.</li> </ul>
Impact	-		<ul style="list-style-type: none"> <li>-Positive impact was generated on farming, namely saving working hours for water management, farm ditch construction, increase of cultivable land and improved road transportation conditions.</li> <li>-Some negative impact was observed when the project paid wages to skilled labor, causing some confusion and apathy to work voluntarily among the unskilled.</li> </ul>
Sustainability	3		<ul style="list-style-type: none"> <li>-They can maintain the canal without any outside support.</li> <li>-The farmers have begun to take actions for further improvement by themselves but still request IAD and INDRHI to provide assistance such as cements, skilled labor, etc.</li> </ul>
Replicability	Lv.2		<ul style="list-style-type: none"> <li>-The project is replicable. If the IAD provides some materials like cements and coordinate with INDRHI, the community is willing to provide the labor and local materials to support the construction work.</li> </ul>

(4) Lessons and Recommendations by Actor		Lessons and Recommendations
Actors		
Study Team		<ul style="list-style-type: none"> <li>-Initial arrangement among parties has to be made during the pre-construction meeting contracting MOA that includes responsibility of each party in detail.</li> <li>-It should allow more time to implement initial process for identification, confirmation and design of the Project.</li> <li>-It was necessary to deal with the entire organization if the project had attempted to extend horizontally.</li> <li>-It was first necessary to explain the benefits of the project clearly. The farmers are reluctant to provide their labor usually because they do not believe that the government keeps the promise. When they know that the project will be implemented for sure, they are willing to take their part.</li> <li>-It was important to motivate the farmers to take another step further.</li> </ul>

**Table 5.22 Cooperative Reinforcement (Animal Raising) Project in Los Conuquitos**

(1) Project Summary							
Project Purpose	Income is increased through raising animals.						
Outputs	We are organized and have meetings.	We collect money for cost-sharing.	We reproduce animals.	We begin selling animals.			
(2) Project Activities							
Time	Activities	WG	IAD HQ	IAD Gr	NGO	JST	Comments
Jun. 2002	Established a new organization.	X	X	X	-	X	From the beginning, women were not willing to take initiatives. They only depended on the external resources. Later, the membership expanded to 36.
	Paid the quota.	X	X	x	-	X	20% of the cost of animals.
	Selected directive officers.	X	x	x	-	X	Selected three committee members.
Jul. 31	Provided courses on cooperative.	X	-	x	X	-	
	Study tour.	X	X	x	x	x	Visited Monte Plata to see livestock farmers.
	Constructed animal pens.	X	-	-	X	-	NGO provided materials with which the group constructed pens.
Sep.	Established group rules.	X	X	x	X	x	NGO helped the group to establish group rules for animal raising.
Oct.	Selected and bought animals.						Bought 32 adult animals (sheep, pigs, and goats) instead of babies, on the contrary to the project design.
		X	-	x	X	-	Some members complained that animals were not fairly distributed. The purchase was made behind the schedule for three months. Later, they bought the rest of animals, 49.
Nov.	Formulated an implementation plan.	X	-	x	X	x	
	Mid-term evaluation workshop.	X	X	X	-	X	
	Raising and caring the animals.	X	-				Some animals died, and some were stolen after the other. Some members sold their animals without the consent of the group.
Dec.- Apr. 2003	Follow-up activities.	X	X	X	X	X	
May	Final evaluation	X	X	X	-	X	

\* Degree of participation by actor: X = high, x = some, - = low.

WG: Women's Group created for the project ("La Progresita"). NGO: FUNDASUR. JST: JICA Study Team.

(3) Project Evaluation

Criteria	Score	Comments
Efficiency	3	- (1) The beneficiaries meet regularly, twice a month. (2) They paid their share (20%) of the project cost. (3) Some of the animals they bought had already given births. (4) Some members already sold animals, but without an approval from the association. It still remains to be seen whether the project has made some difference in people's activities for income generation.
Effectiveness	3	- Livestock is surely one of the good methods for women to raise their incomes.
Relevance	3	- Participants are united more, as a result of attending meetings together, but some of the member already left the project.
Impact	-	- It is a good sign that the beneficiaries meet regularly. However, some of the members want to sell the animals for cash, and the organization has weak control against it. It is not clear how long the members keep their animals because the decisions are basically left in the hands of the individual members. Therefore, the project sustainability itself is largely questionable.
Sustainability	3	- It is also necessary to protect the animals from thieves. - Although they meet regularly, the project entity does not seem strong enough to start a new development process. They still need to work more closely as a group by continuing some activities. Some leaders are willing to work for the community. Self-development depends on them.
Replicability	Lv.2	- The project is replicable, but a collective way of keeping animals should be introduced in order to strengthen the organization.

(4) Lessons and Recommendations by Actor

Actors	Lessons and Recommendations
Women's Group	- We did not choose the project we wanted.
IAD	- Should have participated in the process of designing the project. - Did not realize the participation of a livestock expert in the project despite the fact that the needs had been identified. - We should look for a mechanism to ensure that the community stays united around the project. - We should motivate the community through chats, courses, technical visits, etc.
NGO	- It was necessary to pay more attention to the needs of the beneficiaries in designing the project. - The meaning of "small" animals was not clear. - Should have worked closely with IAD in organizing people. - Other "non-participatory" projects, namely the construction of the garage without any cost sharing, affected this project. We need to be consistent when saying "participation." - Should have chosen the existing organization as a base, rather than creating a new one. - Time was too short to realize the designed outputs and project purpose.
Study Team	- Should have involved the beneficiaries and NGO to discuss the project design. - Should have maintained a balance between the benefit and cost that the project provides. If the benefit is too large, that is, too easy, people think of the project as just a "present," and they are little motivated to protect the animals. In other words, they do not feel the "ownership." - Should have formed a group around a shared interest. Some people joined the project only because they could get animals easily and were little motivated to work as a group. - Should have focused more on livestock. Organizational strengthening is a result of such activities, not the end itself. - Should have let people manage the animals collectively, rather than individually. Although it may not have been what they wanted, it required a great deal of time to discuss and look for a point where the project team and beneficiaries can agree on. This process is important for the "participatory" project. - Should have had the monitoring team and the project operation team work more closely. Or one team should be allowed to serve for two functions.

**Table 5.23 Cooperative Reinforcement (Business Transportation) Project in Los Conuquitos**

(1) Project Summary								
Project Purpose	We increase our incomes through the use of a truck.							
Outputs	We are organized.		Money for cost-sharing is collected.			The truck is bought.		We eliminate the middlemen.
(2) Project Activities								
Time	Activities	FG	IAD HQ	IAD Gr	NGO	JST	Comments	
Jun. 2002	Discussed cost sharing.	X	X	X	-	X	Cost sharing: 20% of a new truck.	
	Selected members	X	-	x	-	X	The base is the existing organization, “La Conquista,” and 19 members joined it.	
	Discussed and decided where to build a garage.	X	-	x	-	X		
Jul.	Paid the quota.	X	X	X	-	-	It was later found that one member paid about the half portion of the share (RD\$32,000). His intention was not clear, but the project was on the verge of being dominated by a few members.	
Aug.	Constructed a garage.	-	-	-	-	X	The Study Team contracted the work out to a private company.	
	Bought a truck	-	-	-	-	X	The Study Team searched and bought the truck by itself.	
	Provided trainings.	X	-	X	X	-		
Sep.	Established rules for the truck use.	X	-	x	X	x	NGO helped the group to establish rules for the use of the truck.	
	Started the operation of the truck.						The group engaged in transport business on a contract basis. They were hired by others outside the community to transport goods to Santo Domingo and other neighboring towns. They did not have anything to transport in the community.	
Nov.	Formulated an implementation plan.	X	-	x	X	X		
	Mid-term evaluation workshop	X	X	X	-	X		
	Training courses (two months)	X	-	x	X	-	Low interest in the training. Only 12-15 members attended the course.	
Dec.	Had the truck stolen	-	-	-	-	-	The truck was stolen while transporting goods to Santo Domingo as a project activity. Members’ interests in the organization significantly reduced. They seemed interested only in the truck, not the organization.	
May	Bought a used truck	-	-	-	-	X		
May 2003	Final evaluation	X	X	X	-	X		

\*Degree of participation by actor: X = high, x = some, - = low.

FG: Farmers' group ("La Conquista"). JST: JICA Study Team.

(3) Project Evaluation

Criteria	Score	Comments
Efficiency	-	-After the truck was stolen in December 2002, the beneficiaries again bought a used one in May 2003. They now have a truck but have not undertaken many activities yet. Thus, it is not possible to evaluate it for Efficiency.
Effectiveness	-	-They are now transporting goods on a contract basis, but the project has not done many activities. It is not clear whether incomes of the community as a group, not particular individuals, will be increased.
Relevance	2	-A truck was highly sought after in order to get rid of middlemen. However, it was not clear whether one truck was necessary for this small target group. The community did not have agricultural products to transport. -A similar project may be more relevant in other communities like Esperanza.
Impact	-	-There is a potential risk to produce negative impact, though such impact has been seen yet. -There is a concern that a few individuals will use the truck for their own interest rather than for the sake of the community.
Sustainability	-	-It can be expected that the truck they bought will be maintained well and remain operational for years to come. Contrary to what the project aims, however, there is a risk that this project might be controlled by a few individuals. -The truck can be used for a new development process in the community, but the organization that manages it has had little experience together and is little motivated to use the truck for the community as a whole.
Replicability	Lv.3	-Almost every community wants a truck, and it is necessary to carefully select a community that justifies the project. -Even if the IAD decides to go ahead, it needs to request the community to share the cost equally, 50:50, or more. -It might be a good idea to have a group of communities to use a truck collectively.

(4) Lessons and Recommendations by Actor

Actors	Lessons and Recommendations
NGO	-Should have been more cautious selecting the project. Needed to examine the market and feasibility. -The project was planned with no goods to be transported in the community. -Should have designed the project to increase people's interests in the organization, not just the truck. -Should have worked more closely with IAD from the beginning. We could have coordinated our activities.
Study Team	-Should have had the NGO involved in the project design. -Should have maintained a balance between the benefit and cost that the project provides. If the benefit is too large, that is, too easy, people think of the project as just a "present," and they are little motivated to maintain the truck. In other words, they do not feel the "ownership." -It was difficult to design the connection between the truck operation and the concept of strengthening the organization. -Too many things (the garage with an office) were given for free, and people misunderstood the meaning of the project. It may have reinforced their idea that a project was something given from the above, and what they needed to do was to organize themselves and fight for it. -People might have thought of the JICA Study Team as a "savior" rather than as someone who worked together on the same ground.



**Table 5.24 Marketing Capacity Project in Esperanza**

(1) Project Summary								
Project Purpose	Farmers learn marketing of agricultural products.							
Outputs	People are organized.		The course is provided.		The farmers are advised by technicians.			
(2) Project Activities								
Time	Activities	FG	IAD HQ	IAD Gr	Prof.	JST	Comments	
Jun. 2002	Selected students.	X	-	X	-	-	The group selected 20 students among the members. Family members of illiterate persons can participate.	
	Formulated an implementation plan.	X	x	X	-	X		
	Designed seminar contents.	-	-	-	X	X		
Jun. 28	Seminar started.	X	x	x	X	x	Local IAD and SEA officers also participated as an observer. A seminar was held once a week.	
Sep. 20	Seminar finished.	X	x	x	X	x	17 students completed the course and received diplomas.	
Nov.	Mid-term evaluation workshop	X	X	X	-	X	Representatives of the beneficiary groups went to IAD Santo Domingo from the four model areas. They presented their projects to the other beneficiaries. The farmers' group made commitment to some actions in this workshop.	
Nov. 26	Visited to model farms.	X	-	X	-	x	Spent one day to visit model farms nearby.	
Dec.-	Follow-up activities.	X	-	X	-	-		
Apr. 2003								
May	Final Evaluation	X	X	X	-	X		

\*Degree of participation by actor: X = high, x = some, - = low.

FG: Farmers' Group ("Mama Tingo"). IAD HQ: Headquarter Santo Domingo. IAD Gr: Regional Office in Mao. Prof.: Instructor contracted. JST: JICA Study Team.

(3) Project Evaluation		
Criteria	Score	Comments
Efficiency	4	-All the planned outputs have been produced. The course has been completed with two drop-outs. -The project can be said efficient, considering the size of the input.
Effectiveness	4	-The farmers have started to put into practice the knowledge they gained in the course, which shows that they have learned marketing well and even more.
Relevance	3	-What the project attempted to achieve was consistent with farmers' needs. -The project scope was a little too limited. It might have been more helpful for the farmers to apply the knowledge if there had been further assistance.
Impact	-	-The farmers clearly changed their ways of thinking from dependent to more independent. They started to make decisions by themselves about what to plant. They have decided to farm pigeon peas collectively and collect money from the members to purchase a tractor for group use.
Sustainability	4	-Although they still need some assistance from outside, they have taken some collective actions as mentioned above. -It is difficult for them to pass the marketing knowledge to other members (horizontal extension within the area). They still need outside support for that.
Replicability	Lv.1	-Highly replicable but certain preconditions must be met. The project requires low input, and IAD has some candidates as professors. Teaching methods are very important to help farmers understand. Preconditions are: (1) the target group needs a certain level of education, (2) has land with some infrastructure, and (3) preferably has a place to meet.
(4) Lessons and Recommendations by Actor		
Actors	Lessons and Recommendations	
Farmers' Group	<ul style="list-style-type: none"> <li>-It is important to be able to share with the other members what we learned.</li> <li>-It is very important to take actions as a group not as an individual because the quantity matters in farm produce sales.</li> </ul>	
IAD	<ul style="list-style-type: none"> <li>-A bad selection of a model area can cause serious consequences in implementing this type of project.</li> <li>-It should be selected the best participants so that they can teach to others what they learned.</li> </ul>	
Study Team	<ul style="list-style-type: none"> <li>-After the starting the series of seminars, we should have a meeting with trainers and trainees to discuss the seminar contents and their procedure. So we could improve the seminar contents more suitable to trainees' requirement even in the middle of the courses.</li> <li>-IAD HQ and Gerencia also should have involved in all the project processes.</li> <li>-During the seminars, we sometimes felt that practical exercises were few. So we should advise the trainers to include more practical exercises. (However, it was also a fact that only few trainees often did their homework given in the previous week.)</li> <li>-One of the trainers is very experienced for teaching so we should show his way of teaching to other IAD staff, particularly the staff of Marketing Section, because they may be trainers of the seminars in the future.</li> <li>-It can be stated that this kind of project (provision of seminars) could not apply in all the settlements. We judge that the social and natural environments around the Mama Tingo Farmers' Association are quite good in comparison with other model areas. More precisely, the organization has been already established and activated for long time, hence, it is relatively strong and reliable. The infrastructures for production in Esperanza III are better than other areas. In short, the Esperanza III area has better conditions and the farmers in Esperanza III have more advanced farming technologies than those in other areas. This combination is an essential factor for the relatively good result of this pilot project, and this implies that the selection of settlement is fundamental to have more fruitful results from similar type of projects.</li> </ul>	

Table 5.25 Land use Planning Support Project in Los Hatillos

(1) Project Summary						
Project Purpose	Farmers learn what to plant.					
Outputs	People are organized.	The study is made.	Farmers are advised by technicians.		Farmers operate and manage demonstration farms.	
(2) Project Activities						
Time	Activities	FG	IAD HQ	IAD Gr	JAD	JST
Jun. 2002	<b>[PLANNING STAGE]</b>					
	Kick-off workshops (PDM and PO)	X	X	X	-	X
	Selected analysis sites.	X	-	X	X	X
Jul.	Conducted soil analysis	x	-	-	X	x
Aug.	Formulated a land classification and land use plan.	-	-	-	X	X
	Presented analysis results.	X	X	X	X	X
Nov.	Mid-term evaluation workshop	X	X	X		X
	<b>[IMPLEMENTATION STAGE]</b>					
	Made a plan for demonstration farms		X			x

\*Degree of participation by actor: X = high, x = some, - = low.

FG: Farmers' group. IAD HQ (Headquarter) Santo Domingo. IAD Gr: Project Office in Los Hatillos. JAD: semi-governmental contractor that conducted the soil survey. JST: JICA Study Team.

(3) Project Evaluation			Comments
Criteria	Score		
Efficiency	3		- (1) People could not be organized well due to the lack of motivation on their part and the lack of such design in the project. - (2) Soil analysis, land classification and land use plan were contracted out to a private company and completed. (3) Only two plots of the demonstration farms started, and the rest did not.
Effectiveness	3		- Farmers know what to plant, but they could not plant what they want. It is necessary to support farmers to start their production at the demonstration plots.
Relevance	3		- The project purpose was consistent with what the farmers needed. They were interested and wished to be involved in the project. However, the project scope was too small to produce tangible, positive impact on farmers who expected more than just a land use plan.
Impact	-		- Unfortunately, the project might have aggravated negative sentiment of the farmers against the IAD. The Study Team and IAD promised to implement the demonstration farms, which have not been carried out yet. They have been waiting for more than half a year.
Sustainability	2		- In order for the farmers to establish demonstration farms, it would take time and require financial and technical support not only from IAD but also from SEA. In addition, the mechanism is not clearly designed for the farmers to participate in the demonstration farms in term of finance. - The farmers still wait for outside support and are reluctant to take actions by themselves. Of course, their financial conditions may not allow them to do so.
Replicability	Lv.2		- The project is replicable if the SEA carries out the soil analysis and collaborates with IAD to make land classification and land use plan. - To start demonstration farms requires land preparation and financing of seeds and seedlings. It is justifiable and required that a high portion of the cost is shared by farmers since such activities help them generate income.

(4) Lessons and Recommendations by Actor			Lessons and Recommendations
Actors			
Farmers' Group			- It is important to be able to share with the other members what we learn.
IAD			- IAD office of Los Hatillos gained a basis of agricultural extension activities. - It should be selected the best participants so that they can teach to others what they learned. - The soil analysis was contracted out, and there were few opportunities for us to learn.
Study Team			- The design of the demonstrative plots needed to follow too many bureaucratic steps. - JICA Study Team should make workshops when the owners of plots participated. - The project did not target a specific organization and could not promote organizational activities. - More interactions were necessary between the farmers and IAD to implement the demonstration farms. Since they are income generation projects, IAD can and should ask farmers to take initiatives or at least share the burden of the project.

**Table 5.26 Project for the Improvement of Water Use and Supply in Los Hatillos**

(1) Project Summary		People drink potable water.		People get potable water.		People receive a course on water treatment.	
Project Purpose		People are organized.					
Outputs							
(2) Project Activities							
Time	Activities	WG	IAD HQ	IAD Gr	NGO	JICA	Comments
Jun. 2002	Established an organization.	X	X	X	-	X	Two existing women organizations were selected as target groups of the project. Later, it was found that these two groups were in conflict with each other.
Jul.	Conducted surveys of the current conditions of water use.	X	X	x	X	x	The beneficiaries wished to conduct surveys by themselves. NGO helped them by teaching them how to conduct surveys.
	Conducted water quality analyses.	X	-	-	X	-	The beneficiaries helped the NGO where to take samples. Samples were taken from water trucks, tanks, wells, vendor bottles.
	Shared the results of the survey	X	X	X	X	-	
	Health education seminar	X	X	X	X	-	
	Formulated an action plan.	X	x	X	X	-	Based on the results of the survey and analysis, the beneficiaries worked together with the NGO to formulate an action plan.
	Demonstrated the treatment method.	X	x	X	X	-	
	Conducted campaign (house visits)	X	x	X	x	-	The members of the committee visited houses to disseminate information.
Nov.	Mid-term evaluation workshop	X	X	X		X	
Dec.- Apr. 2003	Follow-up activities	X	X	X	-	-	
May 2003	Final Evaluation	X	X	X	X	X	

\*Degree of participation by actor: X = high, x = some, - = low.

WG: Women Group

(3) Project Evaluation		
Criteria	Score	Comments
Efficiency	3	-What the participants received from the project, knowledge on the use of water and other training, was found to correspond to the inputs.
Effectiveness	3	-The project purpose has been partially achieved. Those who participated in the project gained knowledge on water usage, but the situation has not changed so that people can drink potable water. -All the members use knowledge and skills they learned in the project to treat water. Some non-members also learned from the members and started to treat water. Some families reportedly had not had water-related diseases for the last six months.
Relevance	4	-The project is critical for the community that has been struggling with the water problem for a long time.
Impact	-	-Two women groups in conflict before have begun to work together.
Sustainability	3	-The participants have gained some knowledge, but it is not clear whether they are going to apply the knowledge and pass it onto other people in the community so that they can improve their health problems related to water.
Replicability	Lv.2	-The project is partially replicable. IAD needs to work with other institutions for medical examinations, water analysis, etc. However, since some knowledge and skills of health education has been transferred to IAD from the NGO, it can independently undertake a project that does not require such technical expertise.
(4) Lessons and Recommendations by Actor		
Actors	Lessons and Recommendations	
NGO	-Three months were too short to change the habits of people. -The role of the IAD was not clearly defined, which made difficult for the NGO to work with them. -The sustainability of the project impact is largely dependent upon the follow-up of the IAD.	
Study Team	-In a long process of working together, two women associations, which had been in conflict, began to work together. -Different methods of health education, skit plays, posters, brochures, etc., were very effective and should be replicated in other areas. -The participation of technicians from the regional office of the IAD is important for carrying out the project.	