

BL PD-AAA-047-B1

5110000 - ②

~~6710984~~

~~A 528~~

~~English~~

extra copy discarded
by ARC to DI

169p

RURAL HEALTH SERVICES ASSESSMENT
OF COCHABAMBA VALLEYS

Done for USAID/BOLIVIA/HAD

Contract No. AID-511-89T

Project No. 511-11-999-000-50225N

3

Submitted by:

Eloy Anello, M.P.H.

Lynn Anello, M.P.H.

TABLE OF CONTENTS

	<u>Page</u>
I. Introduction	1
A. Objectives and Methodology	1
1. Objectives	1
2. Methodology	2
B. Activity Summary	(See Annex "B")
1. Monthly Report for October	(See Annex "B")
2. Monthly Report for November	(See Annex "B")
3. Monthly Report for December	(See Annex "B")
C. Fulfillment of Contract	3
D. Definition of Terms	4
II. Findings	6
A. Area Summary - Valle Oeste	6
1. Health Sector	6
a. Health Facilities	6
b. Health Personnel	14
c. Health Practitioners	18
d. Health Attitudes and Practices	20
e. Environmental Health Factors	22
f. GOB Follow-up Supervision of Health Resources	25
2. Intersectorial Relationships	26
a. Agriculture Programs	26
b. Community Development Projects	30
c. Other Programs	30
d. Education	33
e. Active Community Based Organisations	38

	<u>Page</u>
B. Area Summary - Valle Alto	42
1. Health Sector	42
a. Health Facilities	42
b. Health Personnel	50
c. Health Practitioners	51
d. Health Attitudes and Practices	54
e. Environmental Health Factors	59
f. GOB Follow-up Supervision of Health Resources	61
2. Intersectorial Relationships	62
a. Agriculture Programs	62
b. Community Development Projects	66
c. Other Programs	69
d. Education	70
e. Active Community Based Organizations	76
C. Food for Peace Distribution and Use	80
D. Traditional Medicine	82
1. Curanderos	82
2. Parteros	88
a. Delivery Procedure	88
b. Abortions	89
3. Medicinal Herbs	89
E. Institutional Summary	91
Government Institutions	91
1. Ministry of Health	91
a. Facilities and Personnel	91
b. Environmental Sanitation	92
c. Maternal and Infant Care	93

	<u>Page</u>
2. School of Medicine	94
3. Ministry of Agriculture	95
4. Community Development	96
5. Servicio Geológico de Bolivia	97
6. Acción Cívica de las Fuerzas Armadas	97
7. Corporación de Desarrollo de Cochabamba	98
8. Ministry of Rural Education	98
9. Ministry of Urban Education	101
10. Normal Schools	102
11. National Social Development Council	102
12. Comité Interinstitucional de Coordinación para el Desarrollo del Cooperativismo en Cochabamba.	102
Voluntary Institutions	103
1. Catholic Church	103
2. CARITAS	103
3. Radio San Rafael	104
4. National Federation of Cooperatives	105
5. Alfalit Boliviano	105
6. Instituto de Educación Rural	106
7. Centro para el Desarrollo Social y Económico	106
8. Potram	108
9. Adventist School	108
10. COMBASE	108
11. American Institute	109
12. Methodist Church	109

	<u>Page</u>
F. Potential of Community Based Organizations for Health Work	110
1. Lions and Rotary Clubs	110
2. Pro-development Committees	110
3. Mothers Clubs	110
4. Sports Clubs	111
5. Artisan Groups	111
6. Savings and Loan Cooperatives	112
7. Agriculture Cooperatives	112
8. Parents Committees	112
9. Civic Clubs	113
10. Radio Clubs	113
III. Recommendations	120
A.. Suggested locations for administrative centers and sub-centers in a integrated rural health delivery system	120
1. Valle Alto	120
2. Valle Oeste	123
B. Recommended Area for Pilot Project	126
C. Suggestions for an integrated rural health delivery system	127
1. Objectives	127
2. Description of Integrated Rural Health Delivery System	127
a. Health Sector	127
b. Education	128
i. Rural Education	128
ii. Urban Education	129
c. Agriculture	130

	<u>Page</u>
i. Agriculture Extension Agents	130
ii. Agriculture Experimental Stations	130
d. Community Development	131
e. Man-power Training	131
f. Facilities	132
g. Integration of Health Practitioners into a Rural Health System	132
i. Modern Practitioners	132
ii. Traditional Practitioners	132
3. Community Involvement in Health Programs	133
4. Voluntary Agencies	133
Annex "A" - Methodology for Rural Health Survey in Cochabamba Valleys.	

TABLE OF MAPS

Figure	Page
1.1 Department of Cochabamba with Valle Oeste and Valle Alto indicated	5
2.1 Communities visited in Valle Oeste	7
2.2 Major transportation routes	8
2.3 Health facilities	10
2.4 Health personnel	15
2.5 Environmental health factors	23
2.6 Agriculture and Community Development projects	27 - 29
2.7 Nuclear schools and satellites	32
2.8 Active community based organizations	39
2.9 Markets and areas of utilization	124
2.10 Suggested locations for administrative center and sub-centers	125
3.1 Communities visited in Valle Alto	43
3.2 Major transportation routes	44
3.3 Health facilities	45
3.4 Health personnel	49
3.5 Environmental health factors	58
3.6 Agriculture projects	63
3.7 Community development projects	65
3.8 Nuclear schools and satellites	71
3.9 Local community based organizations	77
3.10 Markets and areas of utilization	121
3.11 Suggested locations for administrative center and sub-centers.	122

I. INTRODUCTION

A. Objectives and Methodology

1. Objectives

In March of 1974 the Government of Bolivia and USAID/B sponsored an assessment of the health sector involving an evaluation of rural health services on a national scale by Dr. Robert Le Bow. The assessment was with a view towards developing a better rural health delivery system. The evaluation pointed to 6 priority regions where a rural health system could be potentially developed. The following is an evaluation of one of these regions--the Valle Alto and Valle Oeste of Cochabamba.

For more details regarding the climate, geography, and other characteristics of the area, refer to Dr. Robert Le Bow's consultant report and the Health Sector Assessment Chapter II.

The specific objectives of the survey were to develop a regional survey instrument designed to provide complementary health planning information to the Health Sector Assessment effort, at the request of the Minister of Health; to carry out the proposed survey; and to tabulate analyze, and interpret the data with recommendations including the positive and negative aspects regarding the potential development of an integrated rural health delivery system in the Valle Alto and Valle Oeste of Cochabamba.

Methodology

The methodology used in the survey involved: 1) interviewing representatives from GOB and voluntary institutions that have health related programs in the area 2) visiting rural communities in an effort to verify the above information and gather additional data, and 3) utilize the services of our empleada, a Quechua speaking cholita in order to obtain information regarding traditional health practitioners. The detailed methodology is presented in Appendix A.

B. Monthly Reports (See Annex B)

C. Fulfillment of the Contract

Duties To Be Performed	Contract	Completed
1. Communities to be visited	40 to 60	61
2. Interviews to be obtained	200 to 300	275
3. Institutional visits	15 to 20	23
4. Physicians survey	30 to 40	53

Of the 61 communities visited, 41 were in the Valle Alto, and 20 in the Valle Oeste. 220 people were interviewed during the field visits, and 55 in connection with the institutional survey. In order to carry out the physicians survey it was not necessary to visit all of the doctors, since Drs. Stambuck and Sabat were helpful in distributing and collecting the survey forms from their colleagues. A total of 53 doctors participated in the survey. In addition to the 23 institutions visited, and ad-hoc inter-institutional coordinating committee was visited.

D. Definitions

For the purposes of this report we have defined the terms listed below as follows:

Curandero: a person who has a traditional outlook on medicine and diagnoses by reading cards or coca leaves. He usually cures with herbs, but in some cases may use drugs.

Partero: a person who has learned to deliver babies through experience, and uses herb teas to facilitate the birth.

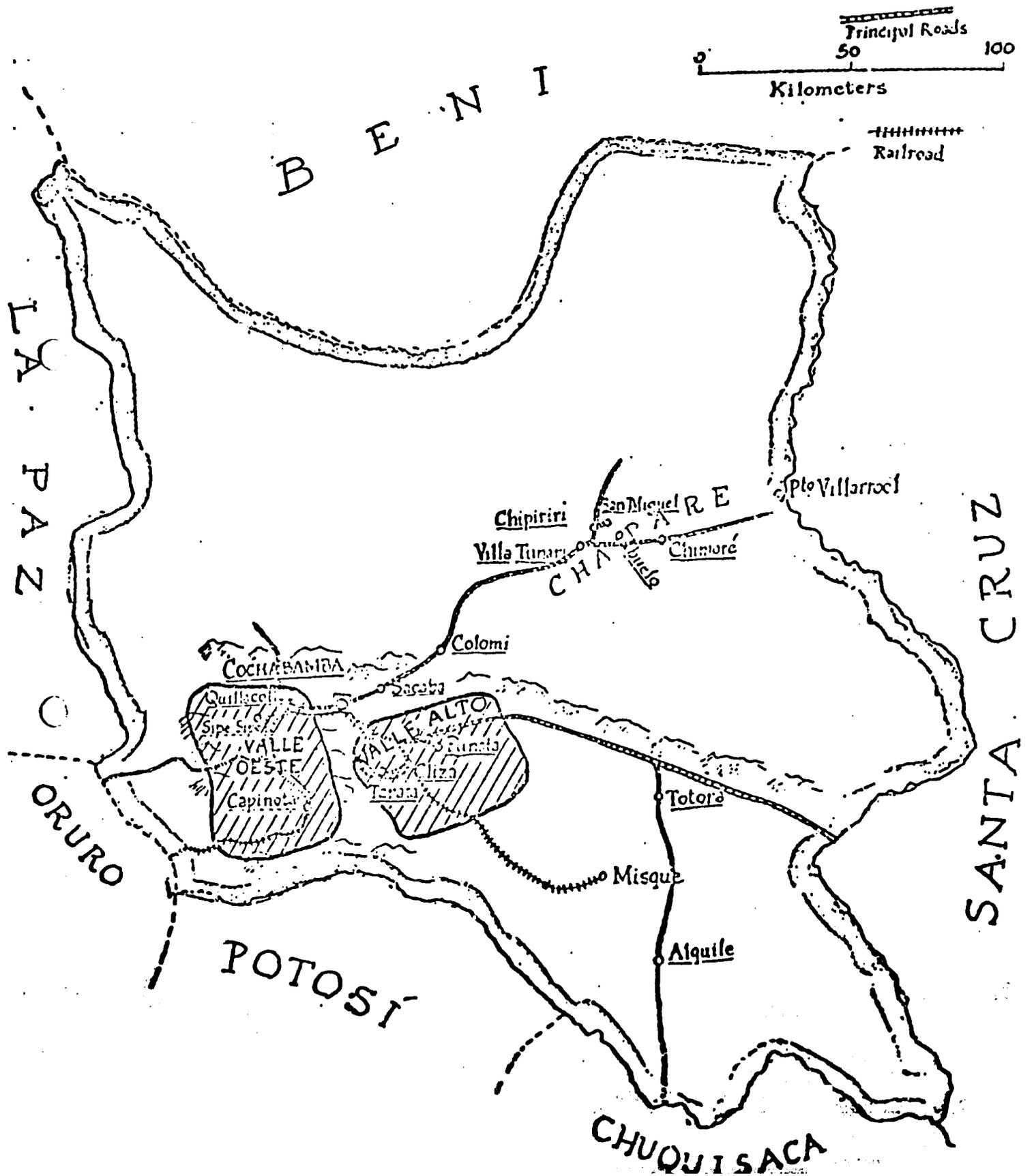
Midwife: a person who has had some training in delivering babies. In most areas these people are called matronas as compared to parteros.

Dentista Empirico a person who does dental work, but does not have the required training or titles.

Sanitarios: a person who administers first-aid and gives injections. Some male nurses prefer to call themselves sanitarios. Hygiene teachers are also considered to be sanitarios.

Farmacéuticos: a person who runs a pharmacy, gives prescriptions, injections, and consultations to his clients. The owners of the pharmacies usually have degrees in pharmacology.

FIGURE 1.1
DEPARTMENT OF COCHABAMBA. WITH
VALLE OESTE AND VALLE ALTO INDICATED



PART II. FINDINGS

A. Area Summary - Valle Oeste

1. Health Sector.

a. Health facilities.

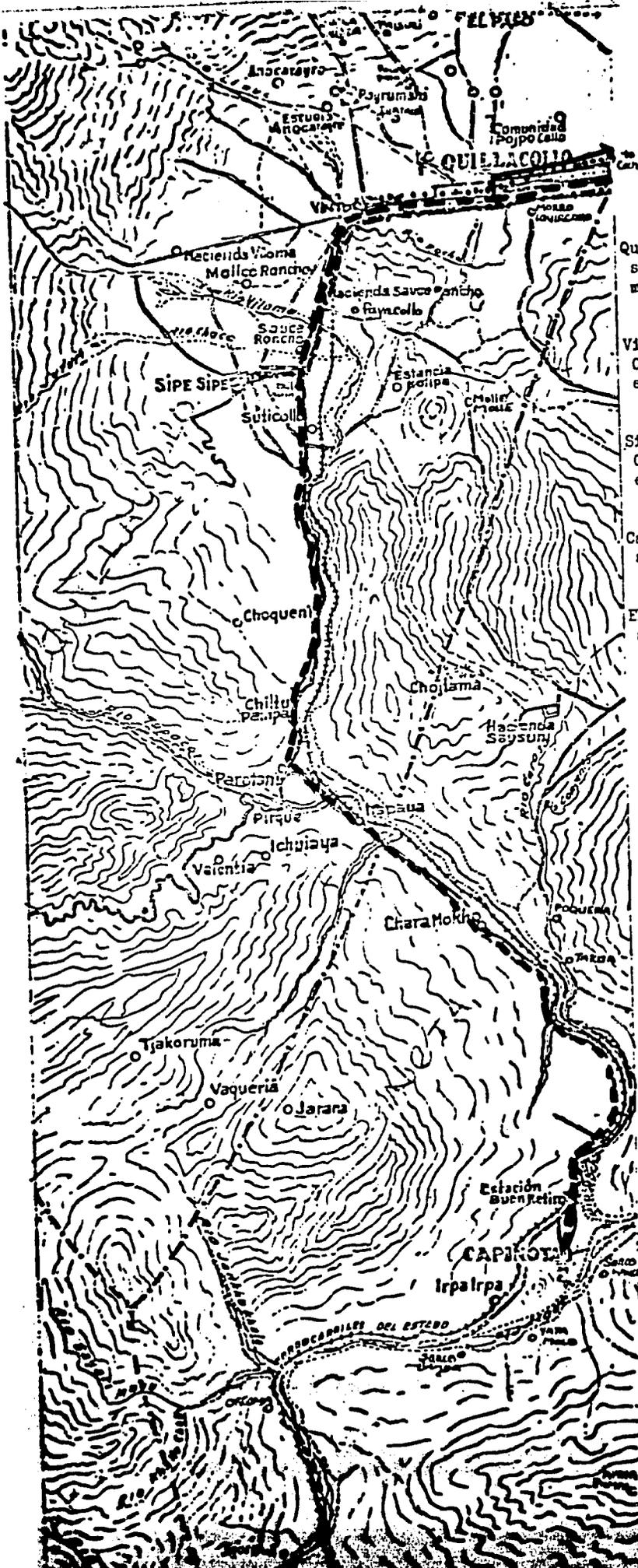
Centro de Salud Hospital.

There is one Centro de Salud Hospital sponsored by the Ministry of Health in the area, located in Capinota. The utilization of the hospital is very low--the doctor sees about 3 patients a day, and the dentist 1 or 2. The nurse and dentist complained about the lack of equipment and the poor facilities. There is no equipment for emergencies, no ambulance, medical texts, or lab equipment. The dental equipment is old and antiquated. Staff accommodations are inadequate. The greatest need of the hospital is an ambulance. Capinota is 63 kilometers from Cochabamba, and in emergencies people must run all over the town looking for someone to take the sick person to Cochabamba. The day we visited Capinota both the doctor and one nurse had gone to Cochabamba.

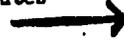
Puestos Médicos

The 4 puestos médicos sponsored by the Ministry of Health are located in Quillacollo, Vinto, Sipe Sipe, and Arque. Utilization is low for the puestos, the average being 50 patients a month for Vinto, Sipe Sipe and Arque. The doctor in Quillacollo says he sees 7 patients a day. If this is true, then the puesto in Quillacollo has fairly good utilization as compared to other puestos. Often the doctor's estimate is higher than the actual number of patient visits recorded.

FIGURE 2.2 - 8 -
 MAJOR
 TRANSPORTATION ROUTES



Quillacollo-Cochabamba:
 service every 20
 minutes



Vinto-Quillacollo-
 Cochabamba: service
 every 20 minutes



Sipe Sipe-Quillacollo-
 Cochabamba: service
 every 45 minutes



Capinota-Cochabamba:
 service 3 times daily



El Paso-Cochabamba;
 service 6 times daily



The puesto in Quillacollo has equipment for first-aid and emergencies, plus an ambulance. The puesto in Vinto is fairly well equipped, having a refrigerator, lab equipment, plus the basic equipment for first-aid and examinations. In Sipe Sipe there is only equipment for first-aid and examinations. In Arque there is very little equipment, according to the local authority. It was not possible to visit the puesto, since the doctor and nurse were in Cochabamba, and they had the only key. There is no dental equipment, no furniture, and the three beds are without mattresses.

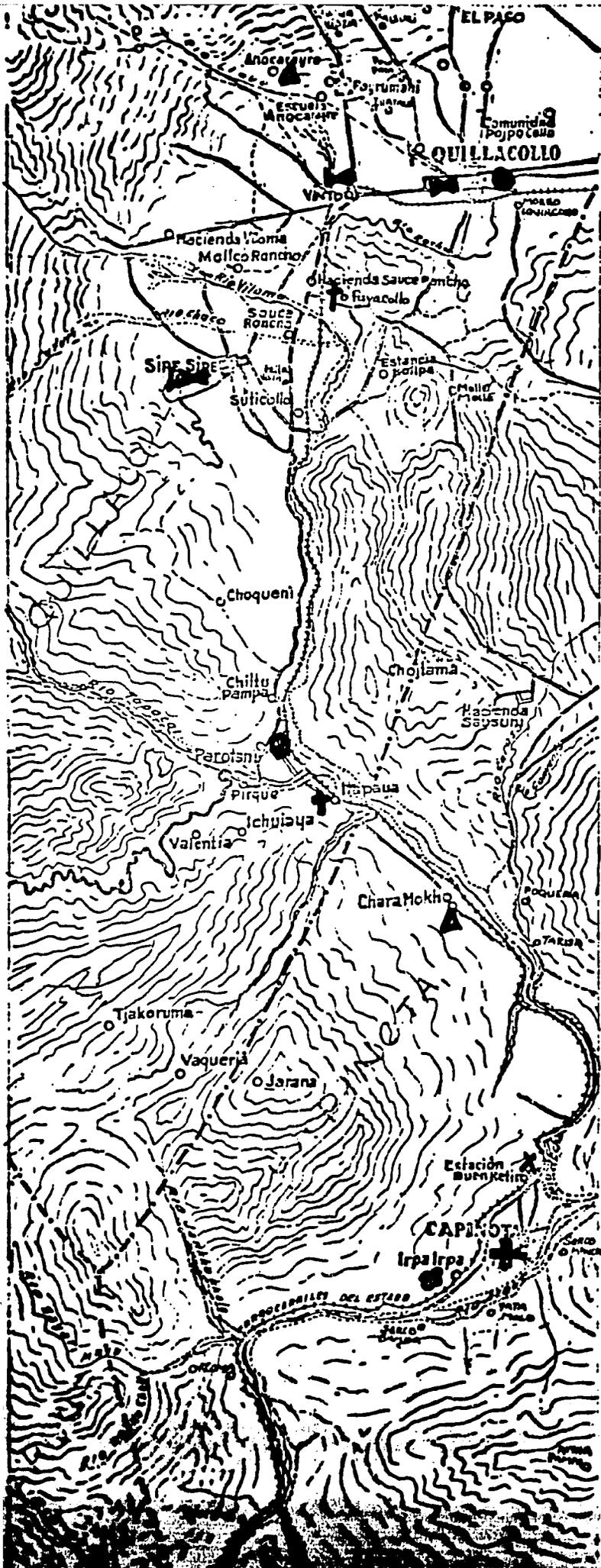
Clinics.

There are 4 clinics in the area. The Caja Nacional de Seguro Social has a poli-consultorio in Quillacollo, COBOCE (Cement Company) has a clinic for the factory workers in Irpa Irpa, and the railroad sponsors 2 clinics--one in Parotani and one in Arque. Utilization is higher for the clinics than for the puestos médicos. The CNSS clinic receives visits from an average of 54 patients daily. The COBOCE doctor sees about 20 patients a day, and the railroad clinics average 14 patients daily.

The CNSS Clinic has a 24 hour ambulance service to the CNSS Hospital in Cochabamba. The clinic is located in a large well-kept building near the center of town. There is a small pharmacy where drugs are sold at low cost to the patients. There are minor equipment needs such as a refrigerator and lab equipment. The 3 beds are only used for emergencies, since all patients are hospitalized in the large hospital in Cochabamba.

The COBOCE clinic in Irpa Irpa is half privately owned and half

FIGURE 2.3
HEALTH FACILITIES



- Centro de Salud Hospital 
- Puesto Medico 
- Posta Sanitaria Ministry of Health 
- Posta Sanitaria Catholic 
- Posta Sanitaria Railroad 
- CNSS Clinic 
- Railroad Clinic 
- COBOCE Clinic 

government sponsored. Both equipment and building are adequate. The doctor treats factory workers and some people from the local community when necessary.

Both railroad clinics are located in old, well-kept buildings. The clinics have good drug supplies, but have minor equipment needs. The doctor in Parotani will treat non-railroad workers in emergencies. Each clinic has 3 beds, however in Parotani there is room for twenty.

Postas Sanitarias

The railroad sponsors ^{has} a small emergency station in Buen Retiro. The station has no equipment, and is located in a small, dingy room. The building needs to be reconstructed. In spite of the poor facilities there is good utilization. The nurse sees about 12 patients daily, and the doctor from Parotani sees 15 on Tuesday afternoons.

The Ministry of Health sponsors 2 postas sanitarias in the area, 1 in Charamoco and 1 in Anocaire. The utilization is very low in Charamoco--about 10 patients per month. In Anocaire the nurse sees from 1 to 2 patients a day. Both postas are located in adequate, well-kept buildings. Charamoco has no beds, and minor equipment needs. Anocaire has adequate equipment and 2 beds with capacity for 5.

The Catholic Nuns have a posta sanitaria in Itapaya. Both building and equipment are adequate, plus there is a good drug supply. All of the nuns are auxiliary nurses. They see an average of 5 patients daily.

In Payacollo part of the Church is being used as a posta sanitaria, and a new posta is under construction. CARITAS is sponsoring the mothers club there and has been influential in arranging for 4 doctors and 4 nurses to come every Saturday afternoon, and a dentist who comes twice a month. The medical personnel bring CARITAS drugs and sell them at low cost to the people. About 15 people are treated every Saturday--mostly mothers and children.

Rural Out-Reach Programs

There are 4 out-reach programs in the areas we visited. The doctor in Vinto visits the posta sanitaria in Anocaire twice a week for 3 hours. The railroad doctor in Arque visits surrounding railroad camps periodically, and the doctor in Parotani visits the emergency station in Buen Retiro for 3 hours once a week. The male nurse in Charamoco visits the Catholic posta sanitaria in Itapaya for 3 hours once a week.

Type of Health Facilities	No.	Sponsor	Equipment			Building			Total No. Beds	Total Cap. Beds
			%A	%MI	%Ma	%A	%MI	%R		
Centro Salud Hospital	1	Min. Salud			100%		100%		10	10
Puesto Medico	4	Min. Salud		25%	75%	50%		50%	8	29
Clinics	1	CHES		100%		100%			3	10
	2	Railroad		100%		100%			6	20
	1	COBOCE	100%			100%			3	5
Puestos Sanitarios	2	Min. Salud	50%	50%		100%			2	5
	1	CARITAS	100%					100%	0	0
	1	Catholic Nuns	100%			100%			0	0
	1	Railroad		100%				100%	0	0

Key: Equipment: A - Adequate

MI - Minor equipment needs

Ma - Major equipment needs

Building: A - Adequate

MI - Minor repairs needs

R - Reconstruct

b. Health Personnel.

Doctors

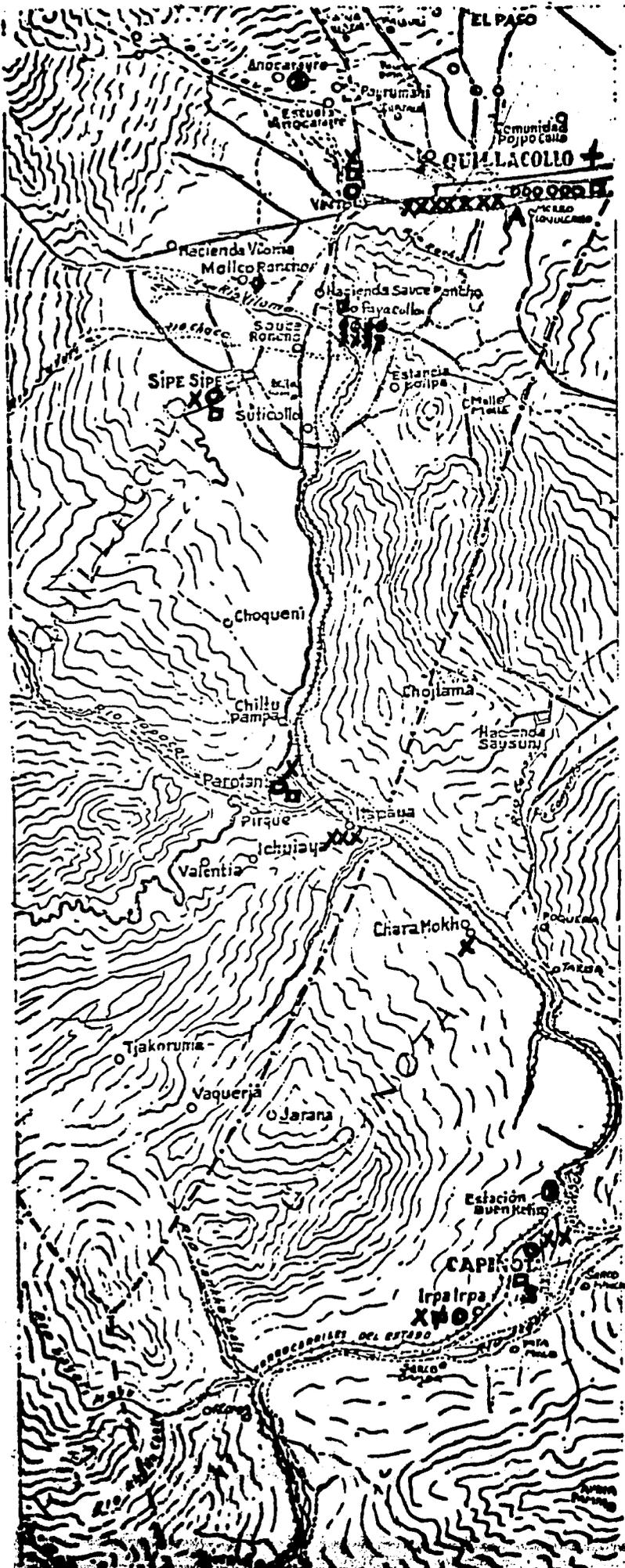
The 6 doctors sponsored by the Ministry of Health are all sño de provincia doctors. At the time of our visits to Arque, Capinota, and Sipe Sipe the doctors were not there. They work 3 hours a day for the Ministry of Health, and 3 hours daily in private practice at the puesto médico or hospital. The 4 doctors working for the CRES clinic work part time, 2 doctors work in the morning and 2 in the afternoon. The COBOCE doctor in Irpa Irpa also attends non-factory workers. The people there say that he is a very good doctor, and often does not charge for his services. The doctor lives in Capinota part of the time, and in Irpa Irpa the rest of the time. He has worked in the factory for a year and a half. Both railroad doctors live permanently in the communities they work in, and they do some outreach work in the surrounding railroad camps. The 4 doctors who come to Payacollo only work on Saturday afternoons. They all live in Cochabamba.

Dentists

The dentists sponsored by the Ministry of Health are all sño de provincia dentists. In Arque the dentist finished his "year" last month, and so far no one has come to replace him. The puesto medico in Quillacollo has not had a dentist for some time. The puestos in Vinto and Sipe Sipe, and the hospital in Capinota each have one dentist. The dentists work 3 hours for the Ministry of Health and 3 hours in private practice.

The railroad sponsors 1 dentist in Parotani. He works full-time, and has lived in Parotani for the last six years. The COBOCE dentist

FIGURE 2.4
HEALTH PERSONNEL



Doctors ○

Dentists □

Auxiliary Nurses ×

Titled Nurses ●

Pharmacist +

Administrator ▲

Sanitary Engineer ⊙

Health Personnel who visit weekly or every two weeks

Doctors ○

Dentists □

Auxiliary Nurses ×

lives in Cochabamba and visits Irpa Irpa once a week. The dentist who attends the posta sanitaria in Payacollo comes twice a month on a voluntary basis. The CHSS clinic sponsors one dentist who works 3 hours daily.

Graduate Nurses

There are 3 graduate nurses in the area. The Ministry of Health has 1 año de provincia nurse in Anocaire. In Buen Retiro the nurse has worked for the railroad emergency station for the last 10 years. The CHSS sponsors 1 graduate nurse in their clinic in Quillacollo. All the nurses work full-time.

Auxiliary Nurses

These nurses generally work full time, except for the railroad nurse in Parotani and the 4 nurses who visit Payacollo on a weekly basis. The nurses in Parotani, Arque, and Irpa Irpa are native of the community they work in.

The environmental sanitation specialist works in Capinota. He plans to install 20 letrines in the homes of the members of the mothers club. The mothers are paying for the letrines in installments.

Of the 51 health personnel in the area, 13% speak only Spanish and the rest are bi-lingual.

Type of Health Personnel	No.	Sponsor	Part-time	Full-time
Doctors	6	Ministry of Health	100%	
	4	Caja Nacional de Seguro Social	100%	
	1	COBOCE		100%
	2	Railroad		100%
	4	CARITAS	100%	
Dentists	4	Ministry of Health	100%	
	1	Caja Nacional de Seguro Social	100%	
	1	Railroad		100%
	1	COBOCE	100%	
	1	CARITAS	100%	
Graduate Nurses	1	Caja Nacional de Seguro Social		100%
	1	Ministry of Health		100%
	1	Railroad		100%
Auxiliary Nurses	9	Ministry of Health		100%
	3	Caja Nacional de Seguro Social		100%
	2	Railroad	50%	50%
	3	Catholic Nurs		100%
	4	CARITAS	100%	
	1	COBOCE		100%
Environmental Health Specialist	1	Ministry of Health		100%

c. Health Practitioners.

70% of the modern practitioners are located in Quillacollo. Of these over half are dentists and doctors. There are also 3 licenced midwives, and one male nurse. The doctors work part-time in hospitals in Cochabamba and part-time in private practice. 2 of the dentists work part-time for Mapaco, and 1 comes only on Sundays. The other dentists work full-time. The male nurse calls himself a doctor and has a part-time private practice. He also teaches school part-time. He says that he is one of the few "doctors" who reside in Quillacollo and attend at all hours. Only 2 of the doctors reside in Quillacollo, all the others live in Cochabamba. 57% of the dentists reside in Quillacollo, the rest live in Cochabamba. All 3 midwives are native of Quillacollo. All of the modern practitioners working in Quillacollo are bi-lingual.

There are 2 dentists practicing in Vinto. One comes on Mondays only, and the other was in Santa Cruz at the time of our visit. There is a doctor who visits the mothers club in Mallico Rancho twice a month, and a nurse and doctor visit the Institute Rural in Irquircollo once a week.

There are 3 auxiliary nurses in Vinto and 1 in Sauce Rancho. The nurses see patients on occasion. The nurse in Sauce Rancho is from La Paz and does not speak quechua. All the other nurses are bi-lingual.

Of the 5 pharmacologists, 3 are located in Quillacollo, 2 in Copi-nota, and 1 in Vinto. The pharmacologists practice medicine in that they give injections, prescription, and consultations. All of the pharmacologists speak both Quechua and Spanish.

The traditional practitioners and sanitaricos are distributed

throughout the area. Over half of the curanderos are bi-lingual, and the others speak only quechua. Over two-thirds of the parteros speak only quechua. All of the sanitarios are bi-lingual. Some of the sanitarios are teachers, one is a store owner, and one is a priest. The others are individuals who have learned to give injections and administer first-aid.

Type of Practitioner	Number	%Spanish Quechua	%Quechua only	%Spanish only
Doctors	10	100%		
Dentists	9	100%		
Graduate Nurse	1	100%		
Auxiliary Nurses	4	75%		25%
Trained Midwives	3	100%		
Parteros	11	27%	73%	
Curanderos	16	63%	37%	
Empirical Dentists	5	100%		
Sanitarios	8	100%		
Pharmacologists	5	100%		

d. Health Attitudes and Practices .

All of the communities surveyed would like to have at least a posta sanitaria in their community. Each community would include all the surrounding communities in a health program centered in their community.

The majority of the people interviewed would like to have a hospital in the nearest large town. The following places were most often recommended:

1. Quillacollo
2. Vinto
3. Parotani
4. Capinota
5. Arque

There doesn't seem to be any problems in this area concerning regional conflicts or prejudices.

There are several factors that influence where a person will go when ill. Following is a list of these factors:

1. Degree and seriousness of illness or accident
2. Financial situation of person
3. Distance from health facility
4. Availability of transportation
5. Availability of drugs at health facility or existence of a pharmacy
6. Stability of health personnel and status of facility as compared to Cochabamba
7. Location of community in relation to nearest facility and to Cochabamba.

The above factors are not listed in order of priority. It is difficult to determine the influence of each factor on every community surveyed and individual interviewed. Following are the general trends

in health practices observed from the communities surveyed.

Accidents: In this case the seriousness of the accident determines how far a person will travel to receive medical attention. Minor accidents such as burns, cuts, and sprains are usually treated in the home or at the local health facility (if there is one). In the case of serious accidents the practice differs according to the area. The people in Capinota and Arque areas go first to the local hospital, clinic or puesto médico. Then they may go to Cochabamba if sent by the doctor. In the communities north of Parotani over half of the people interviewed go directly to Cochabamba. The rest go first to the nearest health facility, and then on to Cochabamba if sent by the doctor. There is regular transportation to Cochabamba from Parotani, Sipe Sipe, Vinto, and Quillacollo, this being an incentive for people to go directly to Cochabamba.

Ill Can't Travel: In this case most people travel anyway to receive medical attention, unless there is a health facility in their community. When this question was asked, the people interviewed could not conceive of someone not being able to travel, even though he was very ill. Rather, they felt that if someone was so ill that he couldn't travel, then he needed urgent medical attention. North of Parotani over half of the people would go directly to Cochabamba, and the rest to Vinto or Quillacollo. Some of the people interviewed preferred to go Vinto or Quillacollo because it was closer and medical attention there is cheaper than in Cochabamba. In the Capinota and Arque areas, the people preferred to be treated in the hospital or puesto médico, and then go on to Cochabamba if necessary.

Minor Ailments: People do not make a special trip when suffering from minor ailments. They usually have aspirin or alkali seltzer on hand or use medicinal herbs for headache, stomach ache, fever and "pains". Curanderos also treat minor ailments, however it is difficult to determine how frequently they are utilized in such cases.

Major Ailments: Major ailments are perceived by the people to mean fatal or chronic ailments. In many cases the people have failed to receive healing from traditional practitioners and therefore have turned to modern medicine as the last resort. All of the people interviewed would go directly to Cochabamba if they were suffering from a major ailment.

e. Environmental Health Factors.

1. Condition and Source of Water Supply.

Drinking Water: None of the water is treated or purified in the area. If water is pumped from wells and piped to public faucets or homes, this is considered to be potable water. 64% of the communities surveyed utilized water from wells, and half of these have a pump system. 32% used river water and 4% utilized water from lagoons. In Quillacollo about 22% of the houses receive potable water, and there are 15 public faucets. Sipe Sipe, Vinto, and Capinote also have potable water systems. In these communities only about 10% of the houses receive potable water. In Arque a potable water system was installed in 1945, however, there was a change of government and the pipes were stolen. This year the Mayor hired engineers to install a system. A huge tank was built on a hill, but unfortunately there was a landslide and the tank collapsed. Now, no one knows what the next

step will be. At present the community is utilizing river water which is channeled through the town by canals.

Irrigation: Irrigation water is provided by rivers, sub-terranean sources, and lake water that comes from the Valle Alto. There are many tributaries of the Rio Rocha which run all year (South of) Vinto.

ii. Waste Disposal.

The only town in the area with a sewage system is Quillacollo. And there, only about 4% of the homes are connected to the system. In Vinto, Sipe Sipe, and Capinota there are some septic tanks and private letrins. Of the communities surveyed over half had at least 1 letrine, usually in the school. Environmental Sanitation was supposed to install 120 letrines, 6 septic tanks and 2 wells in the province of Quillacollo. However the person interviewed from this agency could not tell us the names of the communities where these projects were to have taken place. Three communities we visited had projects: Sauce Rancho, Saticollo, and Capinota. In Parotani, Environmental Sanitation was supposed to install 84 letrines, 2 septic tanks, and 4 wells. The local authority there informed us that there were no wells or septic tanks, and that the only letrine was in the school.

The most popular method of waste disposal is the colonial method. This refers to a section of each family's property that is corraled off and used for waste disposal. It is also common to use an open field, riverbed, or any other convenient location.

f. GOB Follow-up Supervision of Health Resources

In all of the facilities visited, supervision ranged from "none" to "sporadic". There is no supervision of the railroad facilities. The Centro de Salud Hospital personnel in Capinota say that supervision is very sporadic. The puestos médicos in Quillacollo and Sipe Sipe are supervised sporadically. In Vinto and Arque there is no supervision. The postas sanitarias are rarely visited by supervisors. The lack of regular supervision of the health facilities encourages absenteeism and makes for inefficiency in the delivering of services.

2. Intersectorial Relationships

a. Agriculture Programs

There are 2 agriculture extension agents in the area, Sr. Hugo Rojas in Quillacollo and Sr. René Fernández in Capinota. The objective of the agriculture program is to develop the economic structure of rural communities by giving technical assistance to groups of farmers. The extension agent visits the communities under his jurisdiction, organizes meetings with the farmers, and sets up demonstration areas. Once the farmers see that a new method is effective, it is hoped that they will apply it in their own farming.

The extension agent in Capinota has lived there for the last 7 years with his family. He has a small store where he sells fertilizers, seed, and insecticides. He serves about 2,000 families in 15 communities. Sr. Fernández collaborates with the hospital in transport of patients in his jeep. He also gives talks on agricultural methods to hospital groups and patients. On one occasion he and the síndico de provincia doctor gave a talk on Chagas Disease. Sr. Fernández works with the following communities:

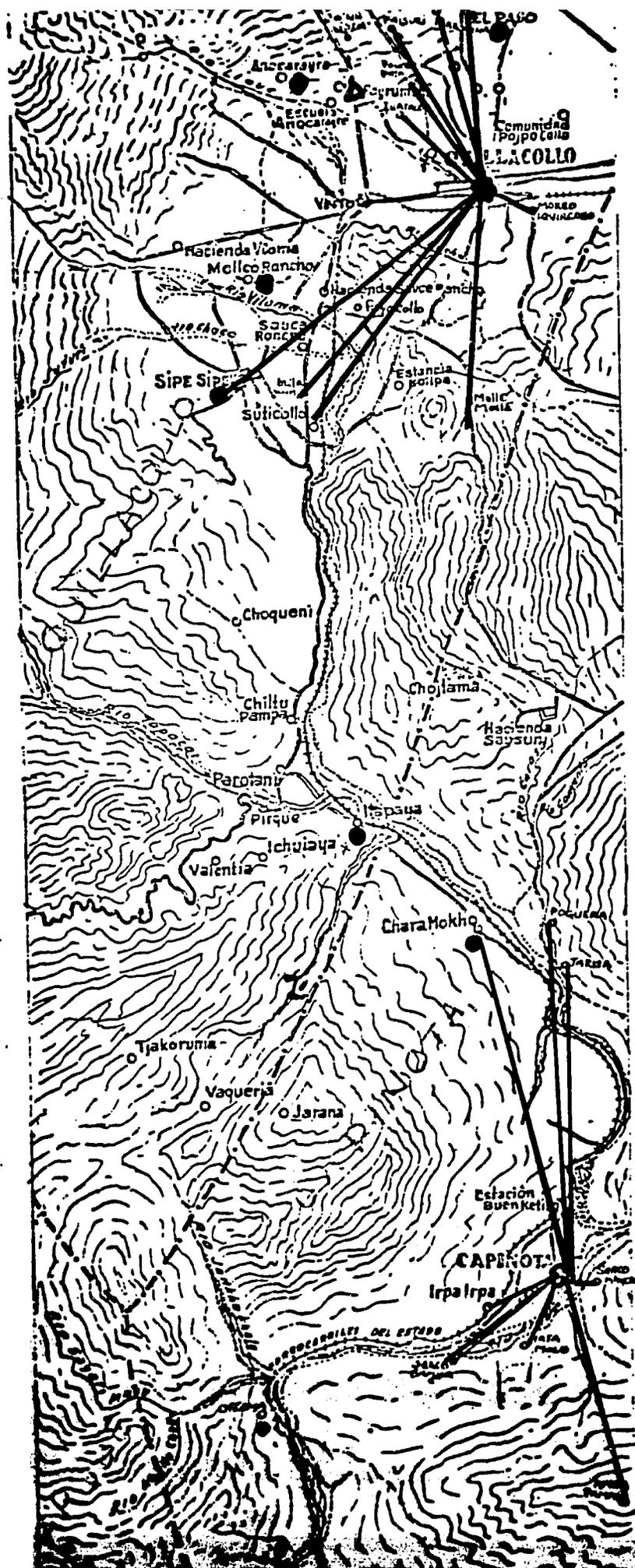
Animal husbandry, wheat, corn, and potatoe projects:

- | | |
|-----------------|----------------|
| 1. Irpa Irpa | 7. Poqueros |
| 2. Sorco Bamba | 8. Taracatachi |
| 3. Yata Moco | 9. Wunocera |
| 4. Characoco | 10. Tocopaya |
| 5. Tarisa | 11. Ventilla |
| 6. Sarco Kruchn | |

Milk cooperatives and pre-cooperatives:

- | | |
|--------------|-----------------|
| 1. Capinota | 3. Apilla Paspa |
| 2. Irpa Irpa | 4. Toco Aylla |

FIGURE 2.6. AGRICULTURE AND COMMUNITY DEVELOPMENT PROJECTS



- Agriculture Extension Agents 
- Agriculture Experimental Stations 
- Community Development Projects 

5. Yata Moco

7. Marcabi

6. Tarisa

The extension agent in Quillacollo has only been there for 2 months and was not well informed about the area. He has records of the following projects that served about 500 families. He plan to continue with the work previously done in these communities.

A. Milk Project

1. Quillacollo

5. Cielo Moko

2. Takata

6. Cuatro Esquinas

3. Inquircollo

7. Esquilan

4. Moro

8. El Paso

B. Wheat Project

1. Bella Vista

6. Marquina

2. El Paso

7. Protero

3. Suticollo

8. Falsuri

4. Sipe Sipe

9. Paipurani

5. Cotapachi

C. Fruit Tree Project

1. Quillacollo

4. Sipe Sipe

2. El Paso

5. Illataco

3. Visto

6. Paucarpata

D. Potatoe Project

1. Bella Vista

3. Protero

2. Falsuri

4. Mollo Mollo.

This extension agent is also responsible for 2 cooperatives in

Viloma and Hamades. He informed us that there will be \$b.350,000 available for planting 80 hectares of wheat in the Quillacollo area.

b. Community Development Projects

There are no cooperative technicians or home economics specialists assigned to the area. However, there are some projects receiving assistance from the Community Development Office in Cochabamba. The projects are supervised directly from this office. Following is a list of the projects currently being carried out, or recently completed:

1. Itspaya - potable water, well construction
2. Mallico Rancho - potable water, well construction
3. Iguarani - potable water
4. Orcoma - potable water
5. Anocaire - construction of dams
6. Plays Ancha - Construction of school
7. Sipe Sipe - Improvement of canal
8. El Paso - potable water, construction of shelter for the market

c. Other Programs

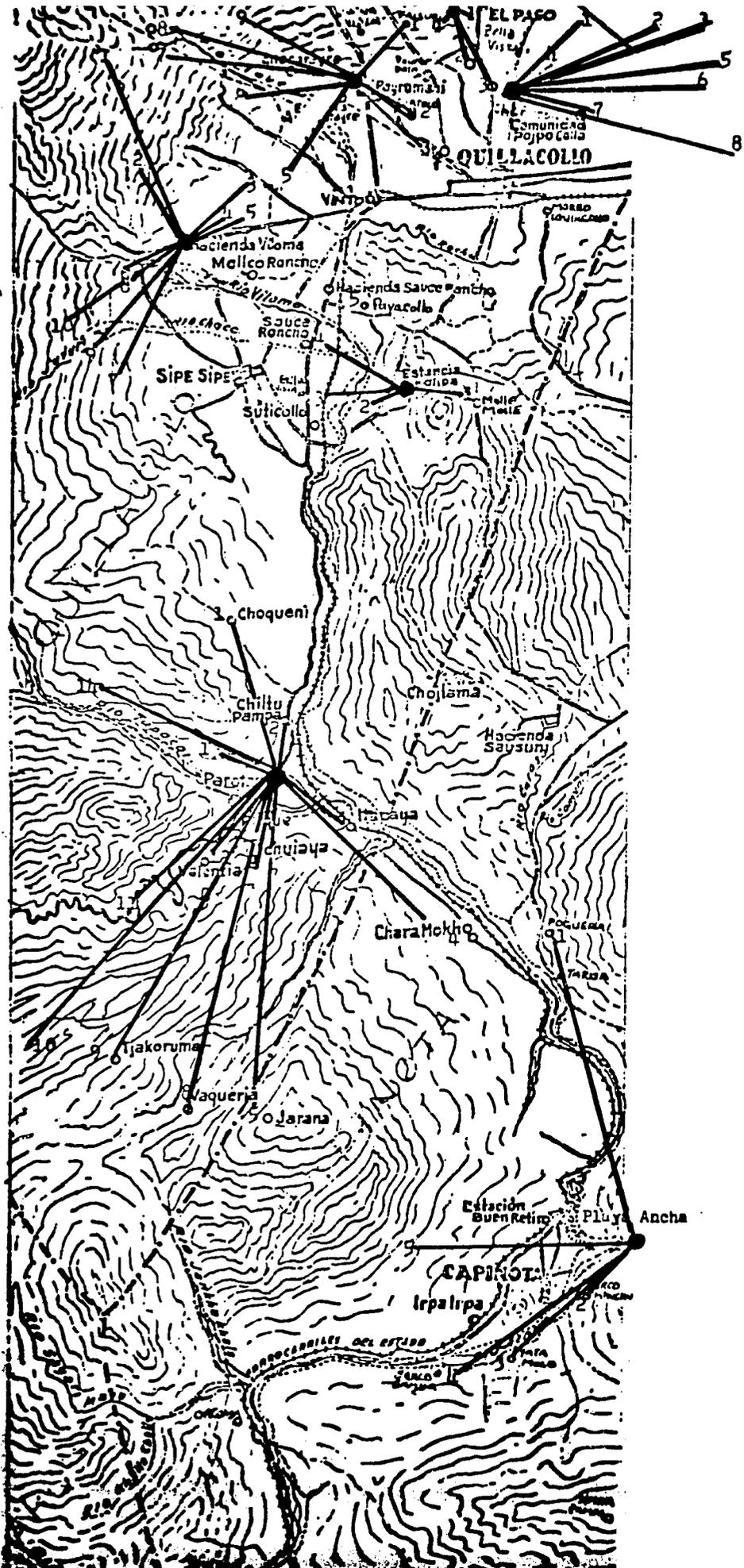
Of the 22 communities surveyed, 12 received food from CARITAS an average of 2 times during the school year. In the provinces of Quillacollo, Capinote, plus the two schools in Arque a total of 95 schools received food from CARITAS in 1974. In the 12 communities we visited where food was received 5 schools received in Quillacollo, 2 in Vinto, and 2 in Arque.

Acción Cívica de las Feceras Arqueas is giving material assistance to public works projects in Yareteni, Sauce Rancho, and Chilita Pampa.

Environmental Sanitation is helping with the construction of wells in Saticollo and Sauce Rancho.

Sponsor of Project	Number of Projects	Number of Personnel	Population Served
Agriculture	42	2	2,500 families
Community Development	8	0	8 communities
CARITAS	18	0	12 communities
Acción Cívica de las Fuerzas Armadas	3	1	3 communities
Environmental Health	2	1	2 communities

FIGURE 2.7
NUCLEAR SCHOOLS
AND SATELLITES



a. Education

1. Educational Facilities

Urban schools are located in province capitols and major towns. They are considered to be of higher status than the rural schools because of their better facilities and higher quality education. For this reason the information given below has been divided into urban and rural sections.

Urban Schools

Type Sponsor	Fiscal	Religious	Total
Primary	25	1	26
Intermediste	8	1	9
Mediate	5	1	6
Total	38	3	41

The school under "religious" represents the Adventist school in Vinto.

Rural Schools

Type	Fiscal
Satellite Schools	81
Nuclear Schools	9
Intermediate Schools	0
Total	90

These rural school facilities can serve as good locations for health activities in communities where postas sanitarias do not exist. It

should be noted that Valle Oeste has the same number of urban schools as Valle Alto, but only has 90 rural schools as compared to Valle Alto's 131 rural schools.

Students Courses and Teachers

Urban Schools

Grades	No. Enrolled Students	No. Regular Students
Primary		
1st.	1849	1603
2nd.	1709	1607
3rd.	1625	1497
4th	1542	1219
5th	1116	1021
Intermediate		
6th	857	766
7th	732	648
8th	599	552
Mediate		
9th	468	422
10th	352	307
11th	218	187
12th	162	153
Total	11,029	9,982

Total No. of Students 9,982

Total No. of Teachers 523

Of the 13,751 public school students in Valle Oeste 73% are in the urban schools. The distribution of these 9,982 students is the following:

70% Primary

20% Intermediate

10% Mediate

Of the 702 public school teachers 67% are urban school teachers.

These 523 teachers are distributed in the following manner:

63% 25 Primary Schools
19% 8 Intermediate
18% 5 Mediate

Rural Schools

Grades	No. Enrolled Students	No. Regular Students
Primary		
1st.	1713	1549
2nd.	1024	913
3rd	700	625
4th	446	391
5th	301	241
Intermediate		
6th	50	50
7th	0	0
8th	0	0
9th	0	0
10th	0	0
11th	0	0
12th	0	0
Total	4,234	3,769

Total No. of Students 3,769

Total No. of Teachers 259

Of the 13,751 public school students only 27% are in the rural schools. The distribution of these students is as follows:

99% Primary

1% First year Intermediate

None Mediate

Of the 782 public school teachers 33% are rural teachers. The distribution of these 259 teachers is as follows:

47% 9 Nuclear Schools

53% 81 Satellite Schools

All the urban and rural schools except one give half day sessions, because the parents don't want their children in school all day. The children are needed at home to help with the work. Many of the rural communities are close to urban centers. The parents would send their children to urban schools (which are half day) if the rural schools had full day sessions. This situation places the rural schools in a competitive position with the urban schools. There have been cases of the full-day rural schools closing down because all the students went to nearby urban schools. The schools that are far from urban centers usually have full day sessions.

Due to this half day session program and to the availability of daily transportation, many of the rural and urban teachers live in the city of Cochabamba. This has been one of the primary reason for the lack of community participation with local schools.

Adventist Normal School

The Adventist Normal School is the only one in Valle Oeste. The program has recently been started and so far there are only 30 students. Within a 3 year period the student body will be increased to 120.

We had an opportunity to talk with the director of the school and he expressed positive interest in collaborating with a rural health project. He stated that the facilities of the normal could be utilized for the training of community health promoters or for intensive health education courses for rural teachers.

e. Active Community Based Organizations

Mothers Clubs

There are 5 mothers clubs in the area, under the jurisdiction of CARITAS. They are located in Mallico Rancho, Payacollo, Sipe Sipe, Capinote, and Inquircollo. We visited the first 4 of these communities and met some of the mothers and medical personnel involved with the clubs. The clubs seem to be functioning regularly, and are effective in teaching the mothers new health practices. The nurse in Capinote says that the mothers are learning slowly but surely, and seeing less of the curandero and more of the doctor.

Cooperatives

The agriculture extension agent in Quillacollo is working with 2 cooperatives, with a total of 41 members. Community Development has plans to work with 3 other cooperatives in the area with a total of 60 members. The agriculture extension agent in Capinote is working with 7 cooperatives with over 350 members. In Sipe Sipe there is a cooperative, but it doesn't seem to fall under the jurisdiction of any agency.

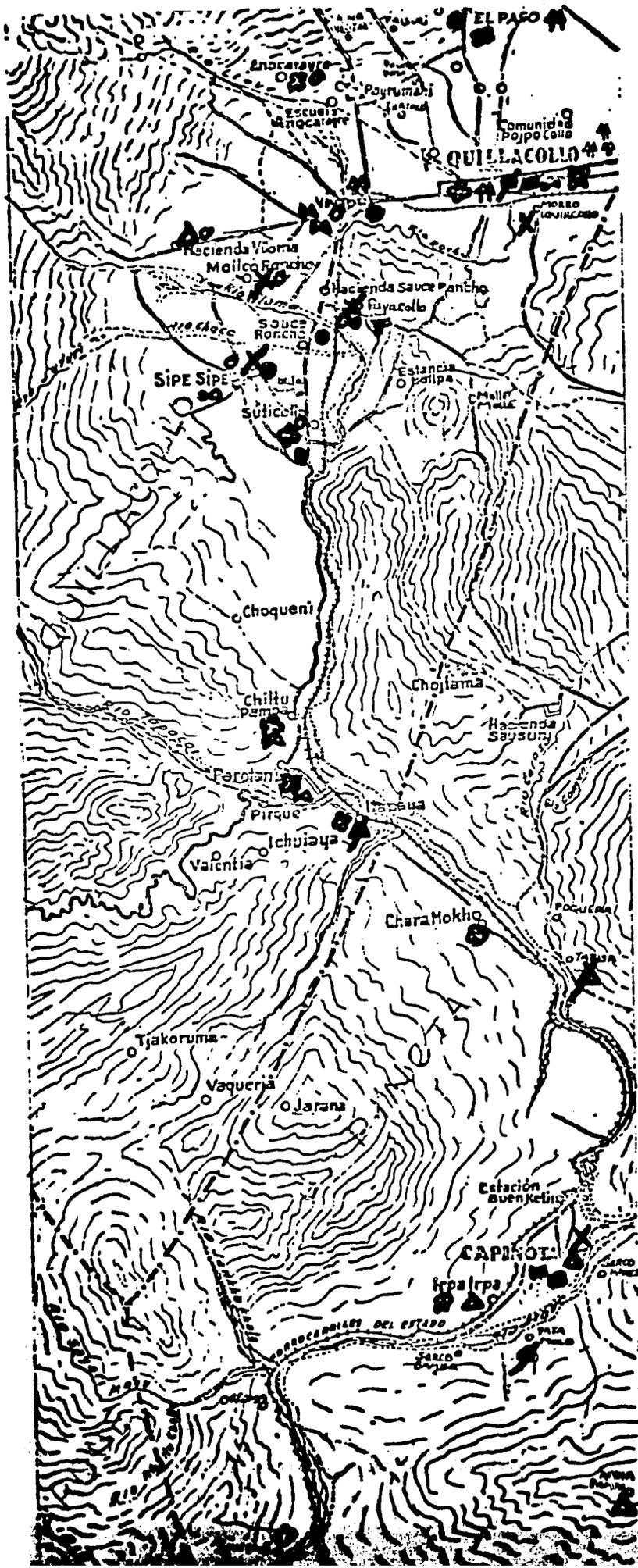
The savings and loan cooperatives are located in Quillacollo, Vinto, and El Paso. There are 3 additional cooperatives being formed in the factories near Quillacollo. The cooperatives will serve the factory workers in Pila, Quimbol, and Manaco.

Local Committees

The local committees range from sports clubs, pro-public works and civic clubs to Rotary and Lions Clubs. In Quillacollo there is a Lions Club and a Rotary Club, and in Capinote there is a Lions Club. There are 43 sports clubs in Quillacollo, and 35 in

FIGURE 2.9 - 39 -
 ACTIVE COMMUNITY
 BASED ORGANIZATIONS

- Savings & Loan Cooperatives 
- Agriculture Cooperatives 
- Pre-Cooperative Groups 
- Mothers Clubs 
- Civic Clubs 
- Sports Clubs 
- Lions Clubs 
- Rotary Club 
- Pro-development Clubs 
- Radio Clubs 
- DESEC Artisan Groups 



Vinto. Since about 80% of the participants are from Cochabamba, we have put 3 under Quillacollo to represent basketball, football and biking clubs; and 2 under Vinto to represent football and basketball clubs.

Each community where there is a school has a parents committee. Since there was a committee in every community we have not included these in the number of local committees. In most of the communities we visited the committee was active.

Artisan Groups

Desarrollo Social and Económico (DESEC) through Asociación de Servicios Artesanales (ASAR) has 5 artisan groups in Sipe Sipe, Vinto, El Peso, Saticollo, and Kirus Rancho. We visited the first 4 of these communities, and no one seemed to know anything about the groups. The office in Cochabamba did not know how many members each group had.

Type of Organization	Number	Number of Participants
Mothers Clubs	5	345
Agriculture Cooperatives	13	over 450
Savings & Loan Cooperatives	3	571
Local Committees*	25	?
Artisan Groups*	5	5 communities

* It was not possible to determine the number of participants for the local committees, since the people interviewed did not always know how many members each group had. Likewise we could not determine

the number of participants in the artisan groups under DIESEC, since the person responsible for this information could not be located.

B. Area Summary - Valle Alto

1. Health Sector

a. Health facilities

Centro de Salud Hospital

The Ministry of Health sponsors 4 Centro de Salud Hospitales in the area, in Arani, Punata, Cliza, and Tarata. There definitely exists a great need for more and better health facilities in order to meet the needs of the densely populated Valle Alto, however, the existing facilities are poorly utilized. Between the 2 sño de provincia doctors in Punata they see 14 patients a day, and most of the beds are empty. The doctors in Cliza and Arani see an average of 6 patients daily, and the doctor in Tarata sees at most 4 patients per day. In most cases the beds are used only for women who are resting after the delivery of a baby. Considering the low utilization of the hospitals in Tarata, Arani, and Cliza, the buildings were found to be adequate. The building in Punata is old and dilapidated, and in need of reconstruction. All of the hospitals have minor equipment needs. Some of the equipment lacking was: current medical texts, equipment for minor surgery and emergencies, and X-Ray machines. The existing dental equipment is inadequate. It appeared that the main job of the sño de provincia dentists was to pull teeth. None of the hospitals had adequate drug supplies.

The largest hospital is in Punata where there are 40 beds. The next largest is in Arani with 22 beds, then Cliza with 12 beds, and Tarata with 6 beds. In Tarata there was room for one extra bed.

FIGURE 3.1

X = COMMUNITIES VISITED

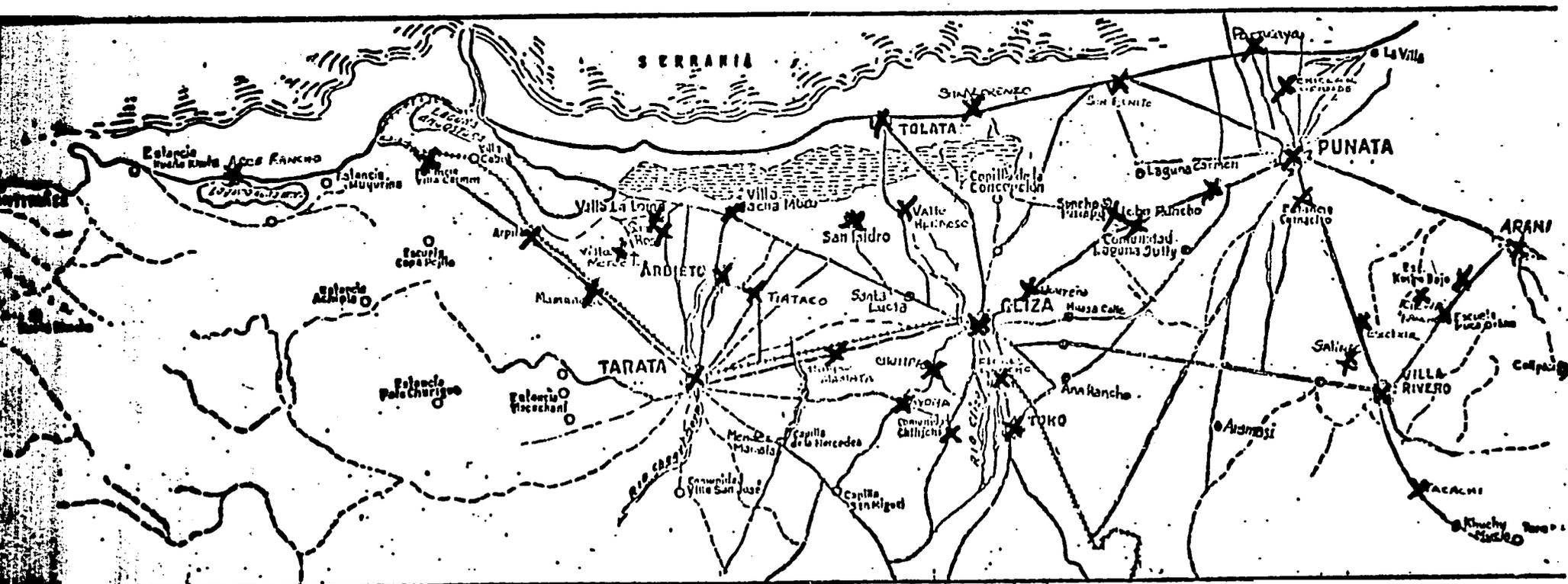
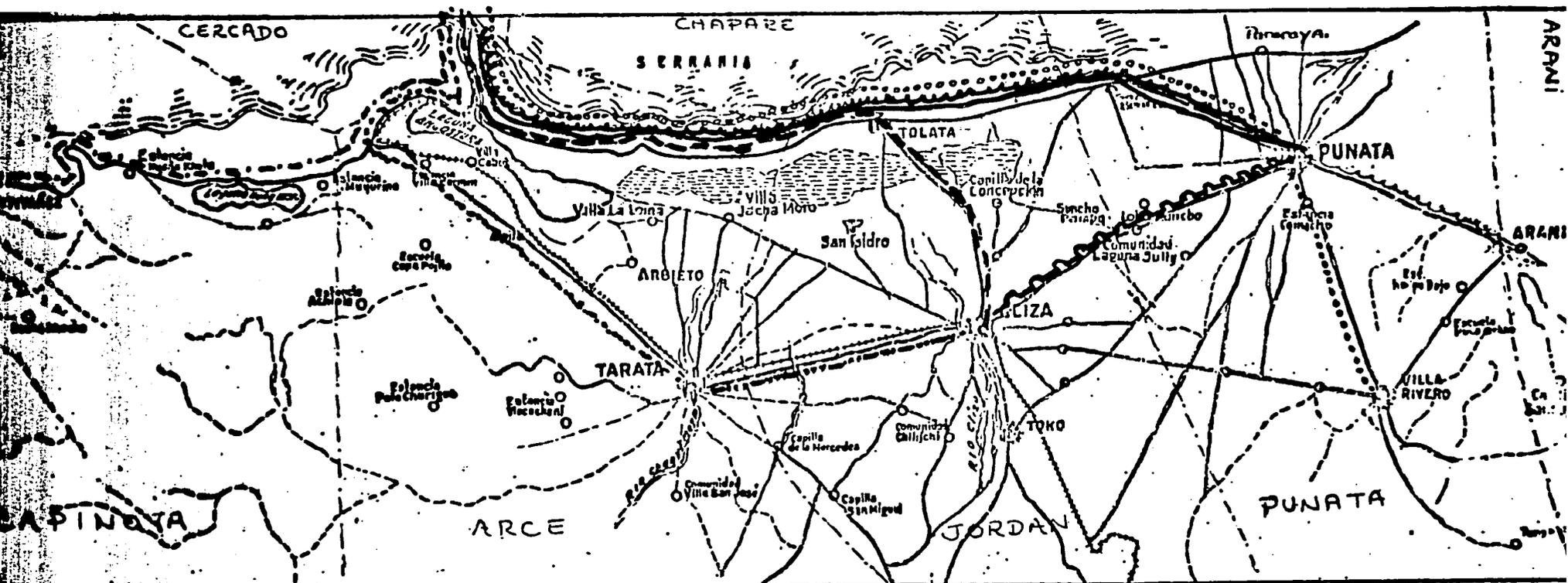
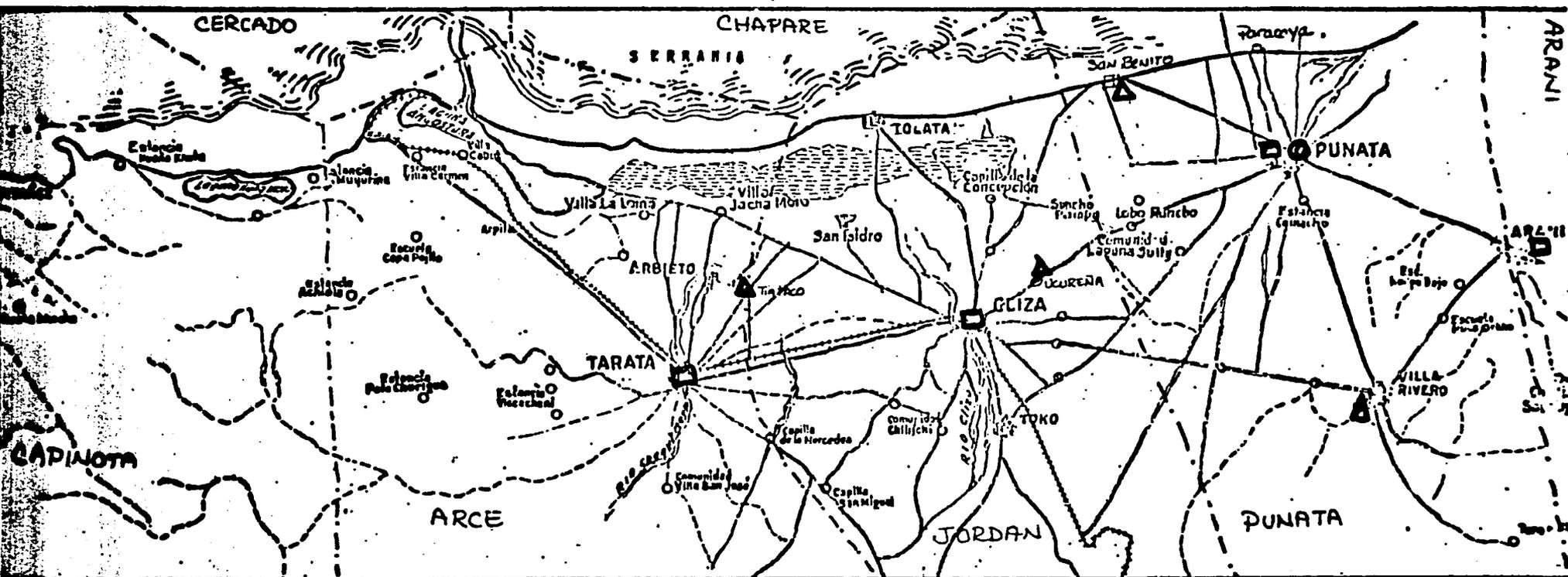


FIGURE 3.2
MAJOR TRANSPORTATION ROUTES



- Santibañez-Cochabamba; Bus service twice a week on Wednesday & Saturday
- Tarata-Cochabamba: hourly service every day
- Cliza-Cochabamba: daily service every 45 minutes
- Punata-Cochabamba: daily service every 20 minutes
- Arani-Cochabamba: Daily service every 2 hours
- Villa Rivero-Punata-Cochabamba: bus leaves 5am and returns 4pm from Cochabamba
- Cliza-Tarata: bus service Thursdays & Sundays
- Cliza-Punata: bus service Tuesdays
 Punata-Cliza: bus service Sundays

FIGURE 3.3
HEALTH FACILITIES



- ▣ Centro de Salud Hospital
- Caja Nacional de Seguro Social Hospital
- ▲ Postas Sanitarias

Postas Sanitarias

The Ministry of Health sponsors postas sanitarias in San Benito, Villa Rivero, Santibañez, Ucureña and Tistaco. Each poste has a full-time auxiliary nurse except for Tistaco. The nurse from the Centro de Salud Hospital in Tarata visits Tistaco 3 times a week. The nurses see an average of 5 patients a week, indicating that utilization is quite low. There was adequate first aid equipment in the postas, however, none of the postas had drug supplies.

The postas in Villa Rivero, San Benito, and Ucureña need to be reconstructed. A new posta is being constructed in Santibañez, and the posta in Tistaco is fairly new. In the following communities a posta has been built, however, there is no nurse assigned to these areas:

1. Roche Rancho
2. Chilijchi
3. Tolata
4. Toko
5. Mamanaca
6. Khuchu Muela

A statistical report from the Ministry of Health in 1973, states that there is a Centro de Salud Hospital in Paracaya. The people interviewed in Paracaya said that there used to be a posta sanitaria there, but that the item was changed. At present the posta is not functioning.

In Villa Rivero the nurse attributed the lack of patients to the fact that she has to charge \$b.1.50 for injections, and the sanitario only charges \$b.1.00. Of course, everyone goes to the sanitario. In Santibañez the Catholic Run said that the nurse does not know anything and therefore the people don't go to the posta sanitaria.

In Tiateco the people did not know when the nurse was coming, and said that she had not been there for some time. In San Benito the nurse opens the posta when there is a patient, otherwise she stays in her house.

Caja Nacional de Seguro Social Hospital

The CNSS Hospital in Punata is the best utilized facility in the Valle Alto. The doctor sees about 24 patients a day, and the dentist, 13. In the doctor's opinion the equipment is adequate for the needs of the hospital. The building is in the process of being remodeled. Patients come to the hospital for medical care from all parts of the Valle Alto, according to the doctor.

Rural Out-Reach Programs

There are out-reach programs in 5 communities in the Valle Alto. The doctor from Punata is supposed to visit Villa Rivero, but the ambulance broke down and he has not been there for some time. However, he does visit the Mothers Club in San Benito once a week. The doctor in Cliza visits Ucureña and Toko, and an auxiliary nurse visits Tiateco three times a week.

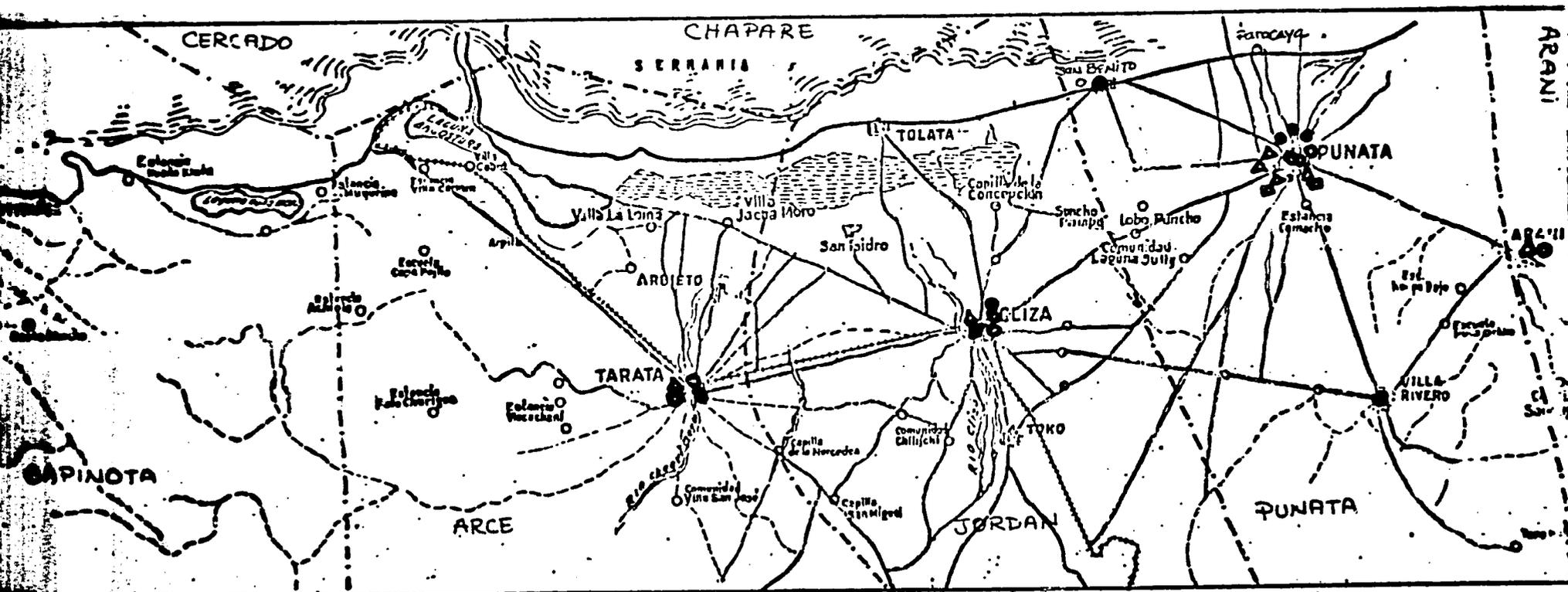
Type of Facility	No.	Sponsor	Equipment		Building		Total No. Beds	Total Cap. Beds
			%A	%M	%A	%R		
Centre de Sald Hospital	4	Min. Salud		100%	75%	25%	80	81
Caja Nacional de Seguro Social Hospital	1	CNES	100%		100%		10	10
Puestos Sanitarios	5	Min. Salud	100%		40%	60%	4	10

Eq: Equipment: A - Adequate
M - Minor equipment needs

Building: A - Adequate
R - Reconstruct

• 12
• 67

FIGURE 3.4
HEALTH PERSONNEL



- ▲ Doctors
- Dentists
- Nurses

b. Health Personnel.

All of the doctors work in the province capitols. In Cliza, Tarata, and Arani there is 1 doctor in each of the Centro de Salud Hospitales. The doctor in Cliza lives there, and has a reputation for being stable. The doctor in Tarata is famous for never being in the hospital. The doctor in Arani goes to Cochabamba every afternoon on the last bus at 4 pm. when there are no patients in the hospital. There are 2 doctors in the Centro de Salud Hospital in Punata. It seems that they take turns staying in Punata. The 2 times we visited the hospital only 1 doctor was there, and the other one was in Cochabamba. The 5 doctors are all año de provincia doctors. They work 3 hours a day for the Ministry of Health, and 3 hours in private practice. The dentists under the Ministry of Health are also doing their año de provincia. They are located in Cliza, Punata, and Tarata. The dentist assigned to Tarata is very seldom there--he has poor equipment and few patients. The people interviewed in Cliza said that the dentist is not always there, and they can't depend on him. Apparently he makes an appearance and then leaves if there are no patients.

In Punata the Caja Nacional de Seguro Social Hospital has a full time doctor-administrator, a part-time pediatrician and a dentist. Both the dentist and doctor are residents of Punata. The pediatrician commutes from Cochabamba every day.

Type of Personnel	Sponsor	No.	%Part-time	%Full-time
Doctors	Min. Salud	5	100%	
	CNBS	2	50%	50%
Dentists	Min. Salud	3	100%	
	CNBS	1	100%	
Graduate Nurse	Min. Salud	1		100%
Auxiliary Nurses	Min. Salud	12		100%
	CNBS	3		100%

c. Health Practitioners.

All of the doctors, dentists, and pharmacologists live in the province capitols. The 4 auxiliary nurses are located in Arani, Chivilichi, and Arbieta (2). The nurse in Arani has a consultorio for the members of the Porraza Cooperative. There are 415 members in the area, and the nurse sees about 20 patients a day. The other nurses only see patients on occasion. 11% of the modern practitioners are not licenced to practice medicine--this includes empirical dentists and pharmacologists. 13% of the practitioners in the area are sanitarios. Some have had special courses where they have learned to administer first-aid, and others have learned through experience. 60% of the practitioners are traditional. The sanitarios and traditional practitioners are distributed throughout the rural communities.

There are 4 private doctors in Punata, 3 of which are residents. One of the doctors works for the CNBS Hospital, and also has a private

practice. In Arani there are 2 private doctors, one is a resident, and the other works part-time and commutes from Cochabamba. There are 2 doctors in Cliza, one who works for the Armed Forces, and one who has a private practice. In Tarata the only doctor is the alfo de provincia doctor at the Centro de Salud Hospital. The private doctors see an average of 6 patients a day.

There are 4 full-time dentists in Punata, 3 of which are residents. There is 1 dentist in Cliza who comes twice a week, and 1 in Tarata who comes once a week. The dentists see an average of 14 patients a day.

There are also 5 empirical dentists, 4 in Punata and 1 in Cliza. These dentists charge less than a licenced dentist and therefore attract patients. Sometimes they do a poor job and the patient ends up paying more money because he has to go to another dentist to have the situation remedied.

The pharmacologists also practice medicine in that they prescribe drugs, give injections, and consultations. There are 5 pharmacies in Punata, 3 in Cliza, and 1 in Arani. One pharmacist in Cliza calls himself a medical specialist, and his services include consultations, deliveries, and prescriptions.

All of the practitioners are bi-lingual except for the curanderos and parteros. 58% of the curanderos and 36% of the parteros spoke Quechua only.

Type of Practitioner	No.	Language Spoken	
		%Quechua-Spanish	%Quechua only
Doctors	9	100%	
Dentists	7	100%	
Auxiliary Nurses	4	100%	
Pharmacologists	9	100%	
Empirical Dentists	5	100%	
Sanitarios	16	100%	
Curanderos	36	42%	58%
Parteros	39	64%	36%

d. Health Attitudes and Practices

All of the rural communities surveyed would like to have at least a posta sanitaria in their community, and a large functioning hospital in the nearest province capitol. When asked which communities would be included in a regional health program for their area, they would invariably include all the surrounding communities.

Regionalism exists, but there does not appear to be any major conflict between regions. In the past there was a serious conflict between Cliza and Ucureña which was settled years ago by a personal visit from ex-president Barrientos. The past conflict does not seem to influence the utilization or delivery of health services. The año de provincia doctor from the Centro de Salud Hospital in Cliza makes weekly visits to the posta sanitaria in Ucureña without any problems.

There are several factors that influence where a person will go when ill. Following is a list of these factors:

1. Degree and seriousness of illness or accident
2. Financial situation of person
3. Distance from health facility
4. Availability of transportation
5. Availability of drugs at health facility or existence of a pharmacy.
6. Stability of health personnel and status of facility as compared to Cochabamba.
7. Location of community in relation to nearest health facility and to Cochabamba.

The above factors are not listed in order of priority. It is difficult to determine the influence of each factor on every community

surveyed and individual interviewed. Following are the general trends in health practices observed from the communities surveyed.

Accident: In this case the seriousness of the accident usually determines whether the person will travel to the nearest province hospital or stay home and seek healing from home remedies or from the local curandero. In cases of serious accidents the trend is to go to the nearest province hospital. Tarata is an exception however, there, half of the communities surveyed preferred to go directly to the hospital in Cochabamba. Many of these communities were located near the road to Cochabamba from Tarata, and there is regular bus service. The interviewees often stated that they preferred to go to Cochabamba because they could be sure of receiving medical attention and drugs. In Tarata there is no pharmacy, the doctor does not have any drugs, and he is often absent.

Ill Can't Travel: In this case the practice in the majority of the the communities is to travel for medical attention. Transportation is available 9 months of the year to and from most of the communities. During the rainy season the availability of transportation decreases greatly in the rural areas. In situations where there is no transportation the sick person does not travel. In many communities it was stated that during the rainy season it is often necessary to contract a truck to take a person to the hospital. This is only done for those who have the financial ability to pay. In the Arani area all of the communities surveyed take patients to the Arani Hospital. In the Punata area 83% take the patient to the Centro de Salud Hospital, and the rest stay home. In the Olisa area half take

the patient to the Centro de Salud Hospital, and half stay home. In Tarata 35% utilize the Centro de Salud Hospital, 54% go directly to Cochabamba, and 11% stay home. Those who stay home usually try to cure themselves with home remedies or see the local curandero.

Minor Ailments: People generally do not make a special trip to receive medical attention or drugs for minor ailments. Those who travel to the Punata, Cliza, or Arani markets will often buy drugs for minor ailments prescribed by the local pharmacist. Medicinal herbs are also commonly used for headaches and stomach problems. Mejoral, aspirin, and alkaseltzer are frequently sold in local stores, and are also used for minor ailments. Curanderos also treat minor ailments, however it is difficult to determine how frequently they are utilized in such cases.

Major Ailments: Major ailments are perceived by the people to mean death bed cases or serious chronic ailments. Often in these cases the people have failed to receive healing from traditional practitioners and therefore have turned to the hospital as the last resort. The financial situation and degree of formal education of the patient influence greatly the health practice in these cases. There are basically three alternatives: 1) those who cannot afford to travel to Cochabamba for medical care usually do not think in terms of traveling beyond the province hospital. 2) those who have sufficient financial means often go to the province hospital first, and then on to the Cochabamba hospital if sent by the doctor. 3) those who do not have a high estimation of the province hospital often go directly to Cochabamba.

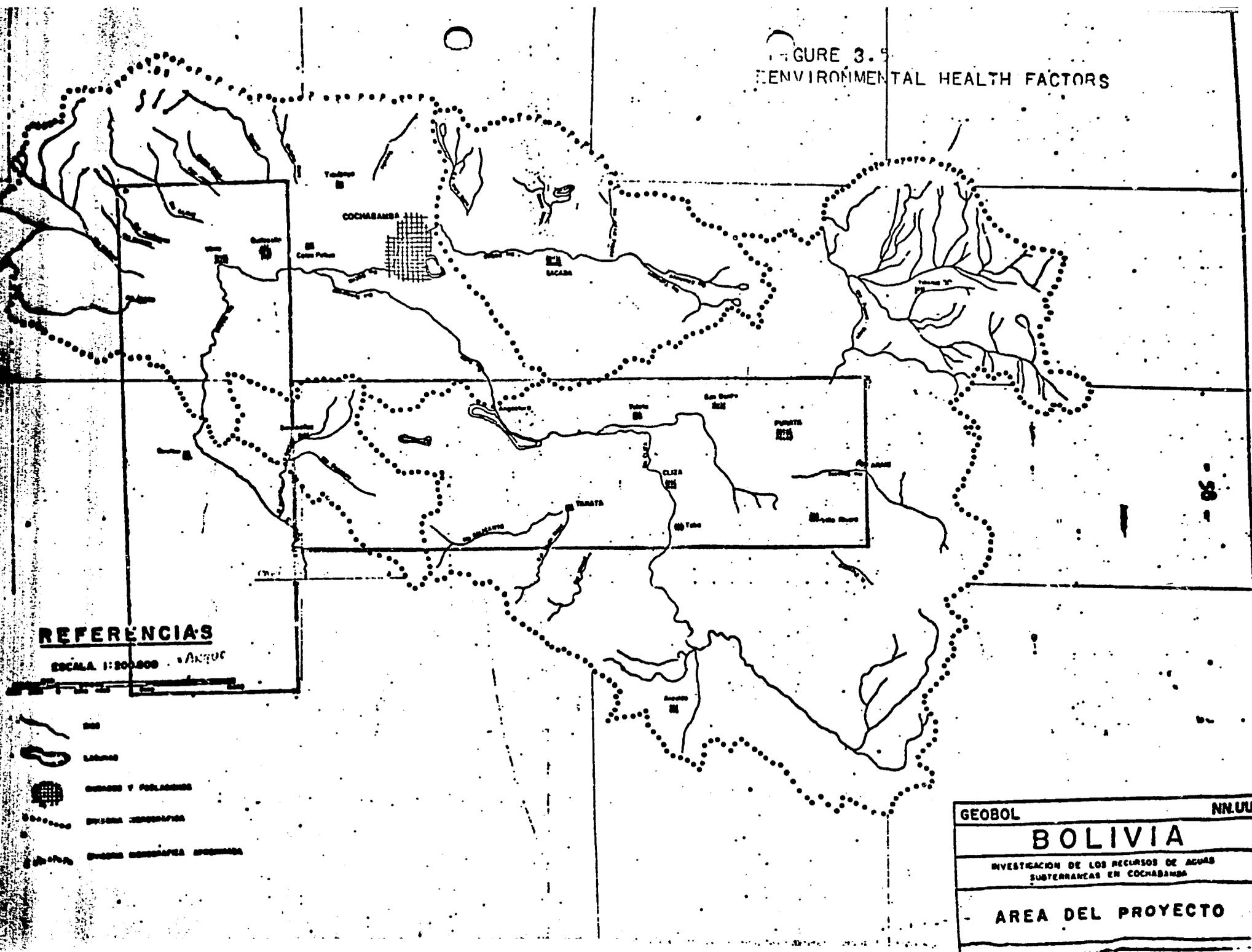
In the Arani area 20% of the people interviewed would go as far as the Arani Centro de Salud Hospital; 60% would go first to the Arani hospital and then on to Cochabamba if sent by the doctor; and 20% would go directly to Cochabamba.

In the Punata area 17% of the people interviewed would go as far as the Centro de Salud Hospital in Punata; 66% would go first to Punata, and then on the Cochabamba; and 17% would go directly to Cochabamba.

In the Cliza area 38% of the people interviewed would go as far as the Centro de Salud Hospital in Cliza; 8% would go to Cliza first and then on the Cochabamba if necessary; and 54% would go directly to Cochabamba.

In the Tarata area only 8% of the people interviewed would go as far as the Centro de Salud Hospital in Tarata; 23% would go to the Tarata hospital first and then on to Cochabamba if necessary; and 69% would go directly to Cochabamba.

FIGURE 3.5
ENVIRONMENTAL HEALTH FACTORS



REFERENCIAS

ESCALA 1:30,000

-  RIOS
-  LAGUNAS
-  URBANOS Y POLARIZADOS
-  DIVISIONES GEOGRAFICAS
-  DIVISIONES GEOGRAFICAS ESPECIALES

GEOBOL	NNLUU
BOLIVIA	
INVESTIGACION DE LOS RECURSOS DE AGUAS SUBTERRANEAS EN COCHABAMBA	
AREA DEL PROYECTO	

e. Environmental Health Factors.

Condition and Source of Water Supply

Drinking Water: None of the water is treated or purified in the area. If a community pumps water from a well or spring and the water is pumped to public faucets or houses, then this is considered to be potable water. Less than half of the homes in the province capitols are connected to a potable water system. The majority of the villages, 68%, use water from private wells, and 26% pumped water from wells to public faucets. Only 6% utilized water from lakes or rivers.

In many of the communities with potable water it was found that the people did not depend solely on the public faucet, but also had private wells in their homes. In many areas the people complained that the well water was too salty.

Irrigation: Communities located near rivers or lakes usually have canals that bring the water to their fields for irrigation purposes. The rest of the communities depend on rain for irrigation. The engineer from GEOBOL, Sr. Carlos Velasco, stated that the Valle Alto has a serious water problem. The water is too salty for certain crops and is also of poor quality. In our survey we found that the communities near Laguna Huacacota did not use lake water because it is too salty for irrigation and drinking. The communities near Laguna Angostura and Laguna Pampa did not utilize the water for irrigation because they lack pumps and piping. They said that the water was too dirty for drinking.

There are only 4 rivers that have water all year; Pucara Myra

in Punata, Rio Pocuta in Arani, Rio Huriquire in Santibañez, and rio Cliza. In the Tarata area the main river is Rio Calcicanto, however it is dry all year except during the rainy season.

GEOBOL is currently investigating subterranean water sources in 22 communities in the Valle Alto. In Paracaya, San José, and Wasa Mayu subterranean water utilization has been initiated. The primary objective of GEOBOL research is to locate subterranean water sources for irrigation purposes.

Waste Disposal: There are sewage systems in 3 of the province capitols. In Punata approximately 20% of the houses are connected to the sewage system. In Cliza about 50% of the homes benefit from the system. In Tarata the Mayor did not know how many houses were connected to the sewage system. Arani does not have a sewage system.

There is no reliable information as to how many houses have letrines in the province capitols. The Mayor in Tarata said that as far as he knows there are no letrines at all in the town. When he was informed that Environmental Sanitation was supposed to install 80 letrines and 6 septic tanks in the Tarata area, he was surprised to hear this since he knew nothing of the project.

In most of the communities the most common method of waste disposal is the "colonial method". This refers to an open area that is corraled off on each family's property and used for waste disposal.

f. GOB Follow-up Supervision of Health Resources

The Arani and Punata health personnel in the Centro de Salud Hospitales claim to receive regular supervision from the Unidad Sanitaria in Cochabamba. In Cliza and Tarata the supervision was said to be sporadic.

The postas sanitarias are required to send in monthly reports to the Unidad Sanitaria, but they do not receive direct supervision. The postas are usually visited by the sfo de provincia doctor and the auxiliary nurses consider this to be a form of supervision. The posta in Villa Rivero had not received a visit from the doctor for 3 weeks because the ambulance had broken down. The posta in Santibañez does not receive visits from anyone, and the auxiliary nurse says there is no supervision.

2. Intersectorial Relationships.

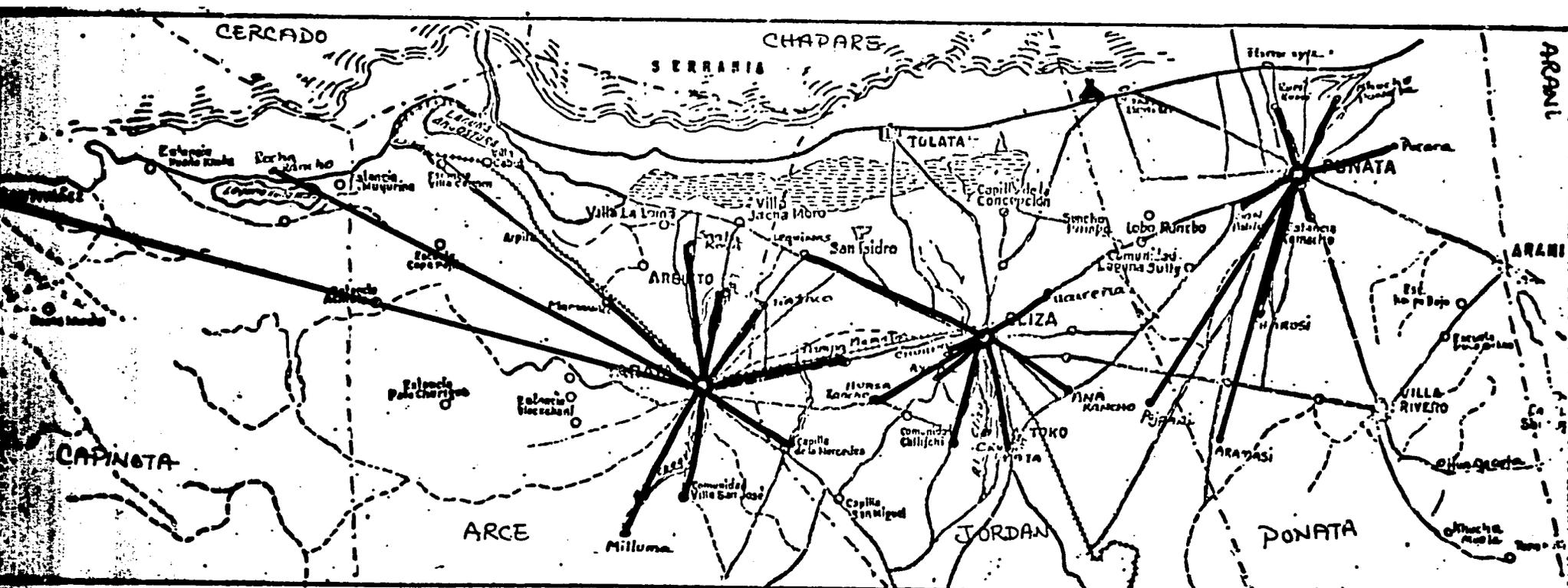
a. Agriculture Programs.

There are 3 agriculture extension agents working in the area: Sr. Benedicto Orellana in Punata, Sr. Germán Lazarte in Cliza, and Sr. Carmelo Torrejon in Tarata. The extension agent assigned to Arani is on a scholarship in Europe. The basic emphasis of the program is to help develop the economic structure of rural communities by giving technical assistance to the farmers and organizing cooperatives and pre-cooperative groups. Each extension agent works with about 11 communities. His job is to visit the communities on a regular basis, gain the confidence of the people, and through meetings and demonstrations introduce modern methods of farming. It is hoped that the people will eventually adopt these methods once it is proven to them that the new way is better than the old. Each agent has a jeep which facilitates his work. Even with vehicles, the 3 extension agents can only serve a small percent of the population.

From what we have observed there is little supervision of the extension agents. In one case an extension agent did not go to his area for a week because of "problemas". The extension agents are supposed to live in the town where they are stationed, however, it appeared that some of them live in Cochabamba and commute to their areas of work, and on some days don't come at all.

The extension agents often only work with a few people in a given community. In some cases the people we have interviewed say that there is no agriculture program in their community, even though the extension agent says he is working in that village. This discrepancy

FIGURE 3.6
AGRICULTURE PROJECTS



- Agriculture Extension Agents
- ▲ Agriculture Experimental Station

may be due to the fact that only a few people are involved in a project.

One problem the agents encounter is a lack of receptivity among the farmers. The people are still very attached to traditional methods. In one instance we heard a group of farmers making fun a new type of corn that the extension agent was trying to introduce. Often the services the extension agent offers are not appreciated or utilized by the people. For this reason the extension agent usually tries to find a few receptive farmers in a community who he can work with. Possibly the lack of receptivity on the farmers part encourages the absenteeism on the part of the extension agents.

Following is a list of the communities where each agent is working:

A. Puzata

Wheat Project

- | | |
|-----------------|--------------|
| 1. Armasi | 4. Huafacota |
| 2. Khuchu Muela | 5. Pajpani |
| 3. Watayu | |

Fruit Tree Project

- | | |
|-------------------------|-------------|
| 1. Hunachun | 4. Bajra |
| 2. Sani Sani | 5. Yacanuyw |
| 3. Fucara Khuchu Puzata | 6. Chirosi |

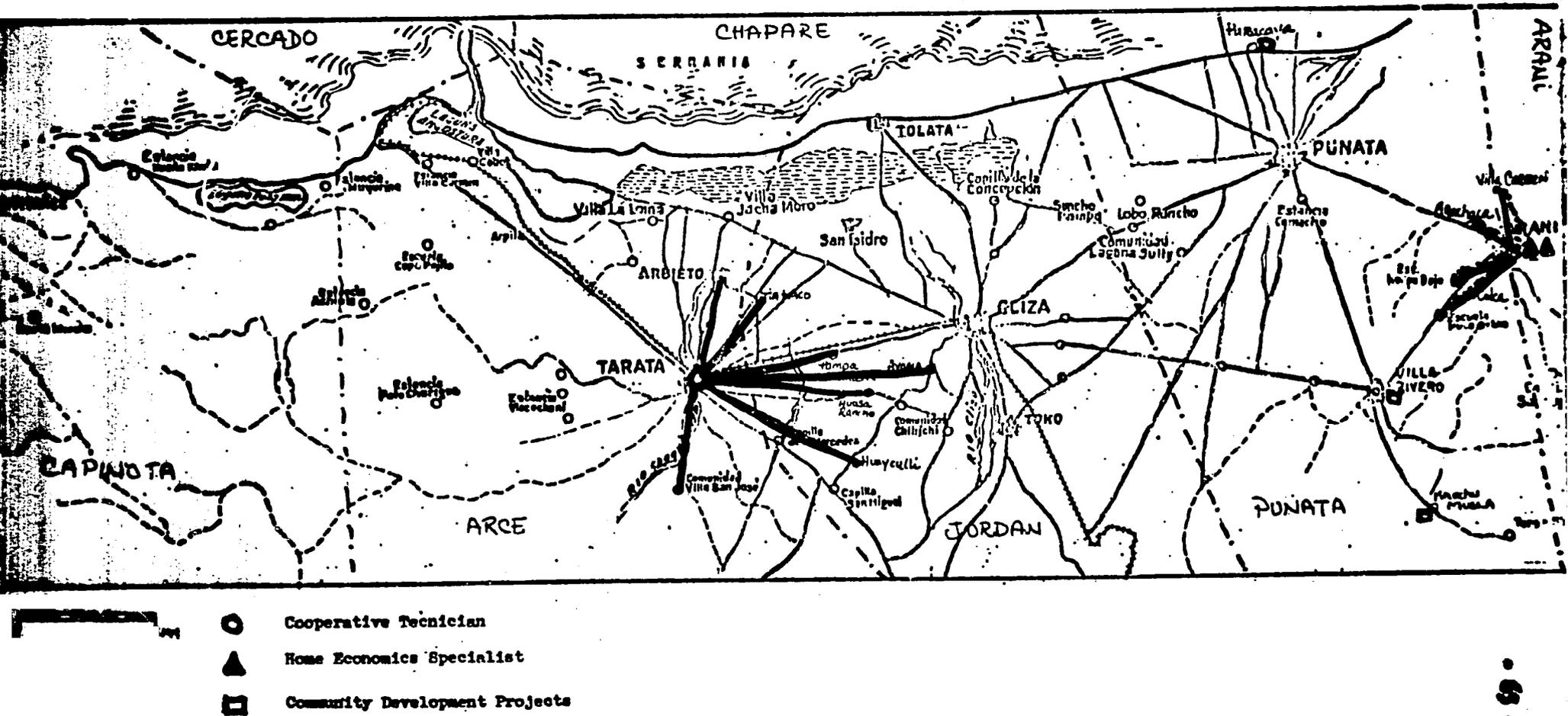
Milk Project

1. San Pablo

B. Cllin

- | | |
|-----------------|-------------|
| 1. Challpas | 3. Ayoma |
| 2. Challpa Loma | 4. Loquinas |

FIGURE 3.7
COMMUNITY DEVELOPMENT PROJECTS



- | | |
|---------------|------------|
| 5. Chilijchi | 8. Ansaldo |
| 6. Cruz Pata | 9. Ucureña |
| 7. Ana Rancho | 10. Toko |

C. Tarata

- | | |
|------------------|------------------|
| 1. Villa Carmen | 7. Santa Rosa |
| 2. Arbiato | 8. San José |
| 3. Tiataco | 9. Ansaldo |
| 4. Pampa Mamata | 10. Santibañez |
| 5. Mendez Mamata | 11. Roche Rancho |
| 6. Mamanaca | |

In Cliza and Tarata the extension agents are promoting corn and wheat, and in some communities milk production. The extension agents help the farmers obtain loans from the Banco Agrícola. The money is used to buy seed, fertilizers, and in some cases a tractor. The money is loaned at low interest and must be paid back within a certain period of time. The farmers complain that the bank does not give them enough time to pay back the loans.

b. Community Development Projects

Until last year all rural cooperatives were under the jurisdiction of the Ministry of Agriculture. Therefore, each extension agent was responsible for the cooperatives in his area. This year Community Development has taken over this responsibility. The home economics specialists also worked under the Ministry of Agriculture, and all their efforts were coordinated with the extension agents. According to one specialist this new system is not working very well. She

says that the work is unorganized, the goals are unclear, and there is no coordination with the extension agents. Last year there were several projects in the Valle Alto and 14 home economics specialists. Now there is no program and only two specialists. In her opinion the whole program died and all the groups ceased to function after the change was made. She also mentioned that there is no supervision under Community Development and she has no enthusiasm for the work.

However, there seems to be better coordination between the cooperative technicians and the extension agents. We met two technicians, one in Punata and one in Tarata. In both places the cooperative technician and the extension agent were working together. The job of the cooperative technician is to help with promotion, organization and function of cooperatives in rural communities. The technician is supposed to collaborate with the cooperatives in obtaining loans from the Banco Agrícola. In the near future Community Development plans to give loans directly to the cooperatives, in an effort to eliminate the red tape involved in going through the Banco Agrícola.

The cooperative technician not only works with cooperatives, but also helps farmers to form new cooperatives. He first promotes the idea of Cooperative formation in a community and then helps the farmers to form a pre-cooperative group. This group is an organization prior to a cooperative that is only recognized by the Ministry of Agriculture. Once the pre-cooperative group is functioning, then the technician arranges for the group to become legalized as a cooperative.

The cooperative technician in Punata planned to visit the cooperatives listed for the Punata and Cliza areas, and verify their existence. However, this project has been abandoned since the technician was recently transferred to Arani to work with milk production and animal husbandry cooperatives. The technician was just starting in Punata when he was moved to Arani, and he mentioned that the change was quite frustrating for him.

The two cooperative technicians are working with the following communities:

Arani

- | | |
|-----------------|---------------|
| 1. Villa Carmen | 4. Kollca |
| 2. Arachaca | 5. Fuks Orkho |
| 3. Collpa Bajo | |

Terata

- | | |
|-----------------|-----------------|
| 1. Tiataco | 5. Ayoma |
| 2. Arbieta | 6. Huayculli |
| 3. Pampa Mamata | 7. Hussa Rancho |
| 4. San José | |

Community Development is also sponsoring projects in the following communities:

1. Paracaya - Installation of letrines (the letrines were installed and are now being used for storage of corn)
bridge construction, improvement of the Paracaya Institute, and the making of a sign (letrero)
2. Villa Rivero - school construction
3. Kuchu Muela - school construction

e. Other Programs

Last year, CARITAS distributed food to 63% of the schools in the communities we visited. Each school received food an average of twice during the year. CARITAS also distributes food to mothers clubs in San Benito, Areni, and Sentibañez.

Acción Cívica de las Fuerzas Armadas is assisting with the construction of two schools in the area in Tolsta (near Cliza), and Arpita (near Tereta).

Sponsor of Project	No.	Personnel	Population Served
Agriculture	34	3	34 communities
Community Development	26	7	23 communities
CARITAS	26	0	26 communities
Acción Cívica de las Fuerzas Armadas	2	0	2 communities

d. Educational facilities

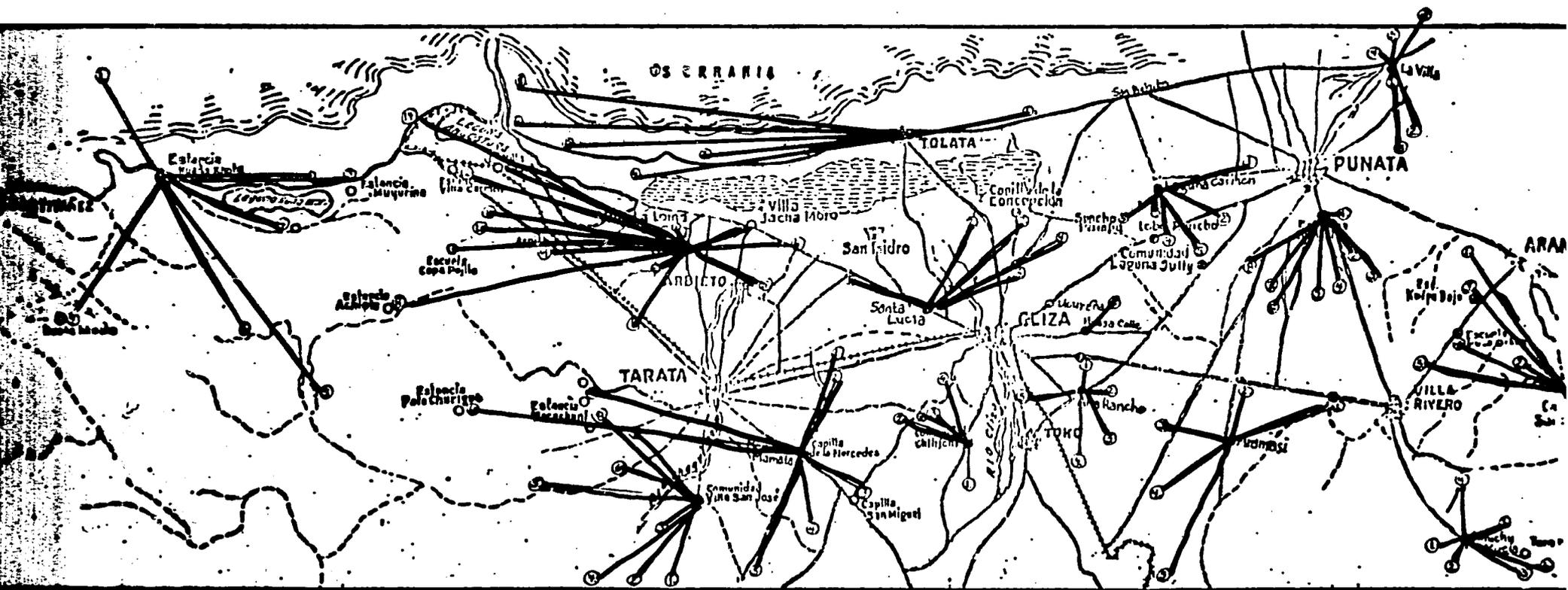
Urban schools are located in province capitals and major towns. They are considered to be of higher status than the rural schools because of their better facilities and higher quality education. For this reason the information given has been divided into urban and rural sections and presented on separate charts.

Urban Schools

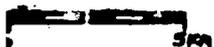
Type Sponsor	Fiscal	Religious	Other	Total
Primary	28	0	0	28
Intermediate	6	0	0	6
Mediate	7	0	0	7
Total	41	0	0	41

Usually where there exists an urban school there also exists some sort of health facility. For this reason the urban school facilities would not be needed for health activities other than health education talks or a vaccination program for the students. Where the government health facilities are too small, urban school facilities may serve as a good location for mothers club meetings, etc.

FIGURE 3.F
 NUCLEAR SCHOOLS AND SATELLITES



*See following page for names of dependencies



Rural Schools

Type Sponsor	Fiscal	Other
Stellite Schools	113	0
Nuclear Schools	16	0
Intermediate Schools	2	0
Total	131	0

These school facilities represent great potential for utilization in health work. In rural communities, the school usually serves as the community meeting hall. The schools could also be used for health education institutes and for other health activities. The majority of the rural schools have been built by local committees made up of the fathers of the school children in the community (Junta Escolar Auxiliar). Some of the larger schools, such as the Nuclear Schools, have been built or expanded through assistance from Community Development and, in a few cases Acción Cívica de las Fuerzas Armadas has donated materials for rural school construction.

Students, Courses, and Teachers.

Due to the fact that the school year ended, two days after our project began, we were unable to visit the schools while in session. However we were able to interview some directors of nuclear schools and a few rural school teachers. The following information was gathered at the departmental offices of rural and urban education in Cochabamba. It was not possible to acquire the number of courses for each grade.

Urban Schools

Grades	No. Enrolled Students	No. Regular Students
Primary		
1st	2043	1854
2nd	1969	1858
3rd	1880	1791
4th	1990	1580
5th	1583	1449
Intermediate		
6th	1064	969
7th	947	871
8th	786	715
Mediate		
9th	844	789
10th	502	465
11th	277	256
12th	181	171
Total	14,066	12,768

Total No. of students 12,768

Total No. of teachers 647

Of the 19,443 public school students in Valle Alto 66% are in urban schools. The distribution of these 12,768 urban school children is as follows:

67% Primary

20% Intermediate

13% Mediate

Of the 1088 public school teachers in Valle Alto 60% are urban school teachers. The distribution of these 647 teachers is as follows:

61% 28 Primary schools

19% 6 Intermediate schools

20% 7 Mediate schools

Rural Schools

Grades	No. Enrolled Students	No. Regular Students
Primary		
1st	2409	2228
2nd	1671	1575
3rd	1173	1118
4th	738	698
5th	463	415
Intermediate		
6th	340	306
7th	193	172
8th	140	129
Mediate		
9th	26	24
10th	11	10
11th	0	0
12th	0	0
Total	7,164	6,675

Total No. of students 6,675

Total No. of teachers 441

Of the 19,443 public school students in Valle Alto 34% are rural school students. The distribution of these 6,675 students is as follows:

- 89.5% Primary
- 10% Intermediate
- .5% Mediate

It is significant to note that 74% of the rural school students are in grades 1 through 3.

Of the 1088 public school teachers 40% are rural teachers. The distribution of the 441 rural school teachers is as follows:

- 48% 113 Satellite schools
- 46% 16 Nuclear schools
- 6% 2 Intermediate schools

It is significant to note the high concentration of rural teachers in the nucleo centers.

Normal Schools

In the Valle Alto there are 4 normal schools for the training of rural school teachers.

Name & Type	No. Students	No. Teachers
Ucureña: for rural hygiene teachers	139	19
Paracaya: for rural school teachers	379	19
Tarata Instituto Nacional de Educación Física	234	27
Tarata Instituto Nacional de Educación Musical	188	20
Total	940	92

These Normal Schools represent potential facilities for health conferences and training institutes. The students represent excellent manpower potential for health projects. Incorporating Normal School students in such activities would be an effective method of training future rural school teachers in their role in a rural health delivery system.

All the urban and rural schools give half day sessions, because the parents don't want their children in school all day. The children are needed at home to help with the work. Many of the rural communities are close to urban centers. The parents would send their children to urban schools (which are half day) if the rural schools had full day

sessions. This situation places the rural schools in a competitive position with the urban schools. There have been cases of full day rural schools closing down because all the students went to nearby urban schools. The schools that are far from urban centers usually have full day sessions.

Due to his half day session program and to the availability of daily transportation, many of the rural and urban teachers live in the city of Cochabamba. This has been one of the primary reason for the lack of community participation with local schools.

e. Active Community Based Organizations

Mothers Clubs

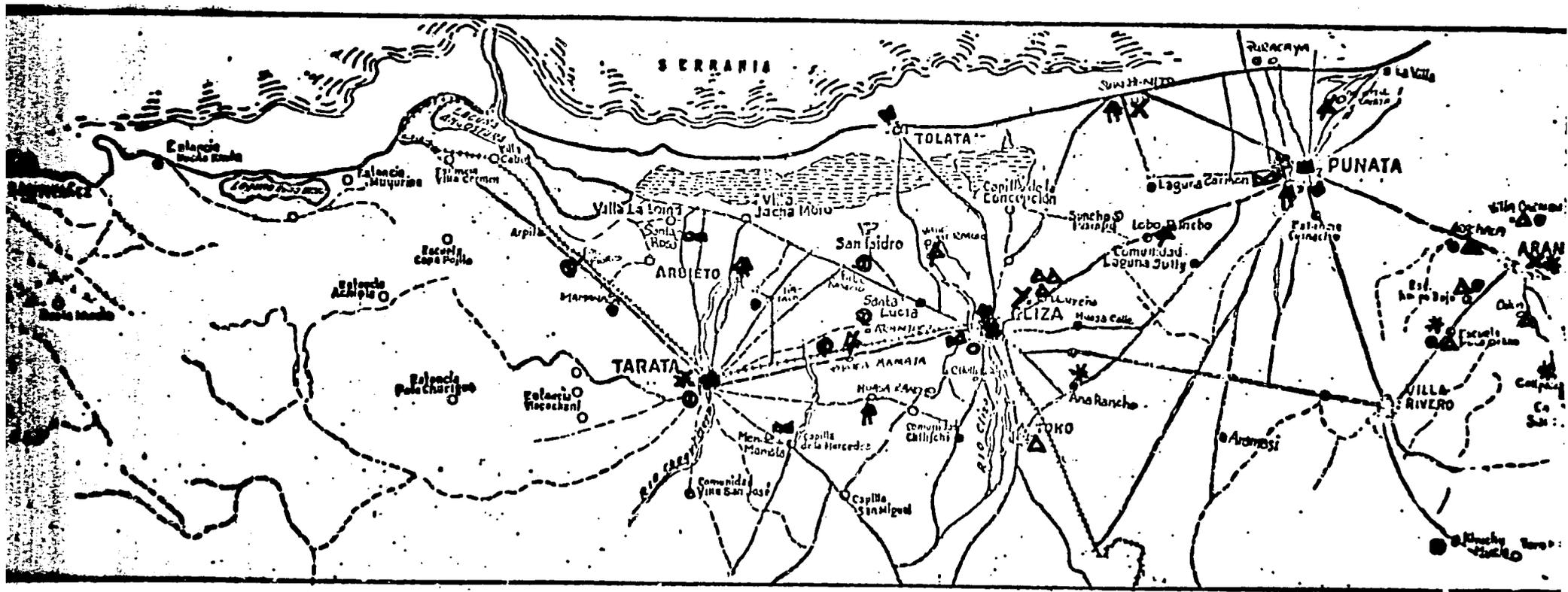
There are 4 mothers clubs in the Valle Alto. The clubs in Arani, San Benito, and Ucureña function on a regular basis. The club in Santibañez only has 10 members and is not well organized. Ucureña is the only club that does not receive food from CARITAS. There was an active club in Tarata but it fell apart when CARITAS stopped giving food. The doctor in Tarata does not know why the food was discontinued.

Cooperatives

The only active cooperatives are the milk cooperatives in Arani, and one or two cooperatives in Oliza. Community Development is channeling most of their resources in the Arani area in promotion of milk production. Many of the cooperatives are just now being organized, since Community Development has recently taken over jurisdiction of cooperatives from the Ministry of Agriculture.

The savings and loan cooperatives are under the jurisdiction of the

FIGURE 3.9
 LOCAL COMMUNITY BASED ORGANIZATIONS



KEY	
Savings and Loan Cooperatives	⊕
Agriculture Cooperatives	⊙
Fire-Cooperative Groups	⊠
Mothers Clubs	⊗
Civic Clubs	⊕
Sports Clubs	⊗
Lions Club	⊠
Pro-development Clubs	⊙
Potrana Artisan Groups	⊗
DFSEC Artisan Groups	⊕
Women's Groups under Community Development	●

National Federation of Cooperatives and are located in Punata (2), Cliza, Huasa Rancho, San Benito, and Arbieto. All of these cooperatives are functioning except for the one in Cliza.

Local Committees

Among the local committees are sports clubs, civic clubs, and pro-development committees. A community usually organizes a pro-development committee when there is a need to build a school, church, posta sanitaria, or construct a well. After the project has been completed the committee dissolves. In many communities the youth have formed sports clubs. These clubs are most active during school vacations. The club in Cliza donated garbage cans to the community. These cans now adorn the central plaza in Cliza. Each school has a parents committee. Since this committee exists in every community, we have not included it in the total number of committees.

Artisan Groups

Extrema Artisan Cooperative has 5 groups in the Valle Alto. The groups are all women who do knitting and weaving. The centers are located in Tarata, Ana Rancho, Arani, Puka Orkho, and Collpacisco. There is a total of 600 members.

Desarrollo Social y Económico works through Asociación de Servicios Artesanales (ASAR) and has groups in Pampa Mamata, Tarata, Aranjues, Villa Rosario, and Villa Flores.

Type of Organization	No.	Number of Participants
Mothers Clubs	4	230
Agriculture cooperatives	18	719
Savings & Loan Cooperatives	6	1447
Local Committees *	29	?
Artisan Groups Potrama	5	600
Artisan Groups * DESEC	5	?

* It was not possible to determine the number of participants for the local committees, since the people interviewed did not always know how many members each group had. Likewise we could not determine the number of participants in the artisan groups under DESEC, since the person responsible for this information could not be located.

C. Food for Peace Distribution and Use.

Food for Peace is distributed through CARITAS to schools and mothers clubs. If a school wants to receive the food, the community appoints a person to be responsible for picking up the food in Cochabamba. The community must pay for the transportation of the person to and from Cochabamba, one night's stay there, and the containers. This payment is in the form of \$b 1.00 given by each student for every shipment of food. Food is given for 20 school days at a time. The food is usually made into bread by the teacher, the mothers or a local bakery. There is no supervision of the distribution and use of the food once it leaves Cochabamba. CARITAS does not have sufficient man-power to supervise the schools. Following is an example of what can happen when there is no supervision:

In some communities the local authorities complained that the food from CARITAS was more of a hinderance than a help. In one case the teacher would collect the money, go to Cochabamba, and pick-up the food. Since some of the children did not pay the peso required, the teacher would make up for it with his own money. After receiving the food he would keep for himself whatever percent he had paid for, and take the rest to the community. When he prepared the food he would make a big to-do about it, distracting the children and wasting time. Once the food was ready he only gave it to the students who had paid the peso. In other cases professors have been known to sell the food in the Cochabamba market.

In the Valle Alto 46% of the schools received food from CARITAS, and in the Valle Oeste 72% received food in 1974. In both areas the food was received an average of twice during the school year. Often a community cannot come up with the money for transportation, lodging, and containers,

and therefore distribution of the food is not regular. A community may receive food one month, and then not receive any food for several months. It is doubtful that the food, distributed in this manner, improves the nutrition of school children.

CARITAS gives food to 8 mothers clubs in the area. The clubs receive the food regularly and are supervised by CARITAS periodically. CARITAS also helps the clubs receive medical attention in areas where there are no health facilities. In order to receive the food each member must pay \$b.15.00 a month. Half of the money goes to CARITAS and half of it is put in the bank where each club has a savings account. The members and their children must also have medical check-ups if they are to receive the food. Each mother receives a certain amount of food according to how many children she has. Since all the mothers pay the same amount of money and some receive less food than others this has caused problems and jealousies in some of the clubs. It is difficult to make the mothers understand that the money is not for the food, but for the transportation and containers.

CARITAS would like to phase out the distribution of food to schools and become involved in a more service oriented program such as the mothers clubs. They have recognized that the food can serve as an incentive for people to utilize medical services and to become involved in health programs. The food is not fulfilling the nutritional needs of school children since it is not regularly distributed, and often poorly utilized due to lack of supervision. The highest risk group is children aged 1 to 4, and school children do not fall into this category. The best way to reach the 1 to 4 age group is through the mothers clubs.

D. Traditional Medicine

1. Curanderos

The most interesting and in some cases alarming interviews were with curanderos. In order to have a clear picture of traditional medical practices in the area, we are including these interviews in this section of the report. Most of the curanderos were interviewed by our helper, Jacova, a Quechua speaking cholita. In many communities the people would not readily give out information about curanderos. Only when Jacova went alone and told the people she met that she needed to see the curandero for a cure, would they tell her who the curandero was. When we were with her and asked about curanderos, the people were very vague, saying that the curandero lived far away or that there was no curandero in the area. Following are the interviews as Jacova recounted them to us:

Punata (Sr. Dionisio LLaves)

This curandero calls himself a naturista fino and is originally from the Altiplano. He was drinking chicha when Jacova arrived, but consented to give her a consultation. He took out a deck of cards (naipes in Spanish) and read the diagnosis. Jacova had told him that her sister was ill, and she wanted to know how to cure her. The cards read that the sister was suffering from headache, footache, and chest pains. She had been bewitched by an enemy and only he (the curandero) could cure her. If the sister came immediately he could cure her within a week. However, if the sister goes to a doctor she will spend a lot of money and the doctor cannot guarantee a cure. In the meantime the sister should burn incense in honor of the Virgin and the Pacha Mama. He charged

\$b. 10.00 for the consultation. He claims that people wait in line to see him every day, and that he knows how to bring God into his house.

Punata (Don Pando)

When Jacova arrived at his house, Don Pando told her that "Don Pando" was not home. After much pleading on her part, she convinced him to talk to her and discovered that he was Don Pando. He said that his work is primarily consists of calling the Pacha Mama by burning coa, incense, and grasa de llama. Through his conversations with the Pacha Mama he knows how to cure a person. He also puts blessings into houses by the same procedure.

Paracaya (Patricio Ponce)

This man is from Villa Rivero, but has been studying at the Normal School in Paracaya for the last five years. He has many patients and plans to stay in Paracaya for the next 2 years. He uses grasa de gallina for delivering babies, and recommends a tea made from eucalyptus or pine leaves for abortions.

Cliza (Luis Escóbar)

Sr. Escóbar was drunk at the time of our visit, but we were able to talk to his son. It seems that Sr. Escobar is very famous and has patients from all over Bolivia. He has had as many as 50 patients at a time-- there were only 12 patients at the time of our visit. The campesinos bring their own beds and cooking utensils. Sr. Escobar is a "bone specialist" and claims to be able to heal a fracture within a month. The cure involves putting a parcha (salve) of egg yolks, sugar and tobacco on the affected area, then the bone is set in a splint

or in plaster. The perche is changed every four days. Each patients must stay in bed until the curandero gives him permission to get up. The cure costs \$b.1,000.00. Sr. Escobar has many patients because he cures quickly, and in the hospital it takes a long time to heal a fracture. His son says that about 3 patients arrive daily to see his father.

Terata (Matilde Alvarez)

Sra. Alvarez diagnoses by placing a red egg on the stomach, then the egg is broken and if it is rotten it means that the person has been bewitched. She claims to see 20 patients a day. The diagnosis costs \$b10.00, and if the money is not paid then the truth will never be known.

Sipe Sipe (Isauro Quisber)

Sr. Quisber is originally from Altiplano, but now resides permanently in Sipe Sipe. Jacova told him that her friend, Eloy, was ill. Sr. Quisber read in his naipes that an enemy had given Eloy something to drink and this had caused his illness. Eloy had a headache and a stomach ache because he had been angry. If Eloy did not come to be cured soon he would die, go into a coaket, and then directly to the cemetery. A doctor cannot cure him, only Sr. Quisber can cure him. If he goes to a doctor, the doctor will tell him he needs an operation and this will be very expensive. Sr. Quisber can cure him in 3 days after analyzing his urine and taking his blood pressure. In the meantime Eloy should take a tea made from ground anis star, and another tea made from the mansenilla flower, plus cibaljina, a pain killer. He claims to have patients in Puneta, Olisa, Terata and Cochabamba, and says that his house is like a hospital.

Capinota (Javier Condori)

When Jacova went to his house there were 5 people waiting to see him. She told him that she needed a cure for a friend. He told her that the friend was going to die if he did not sacrifice a lamb in order to change his death. Before killing the lamb the friend should burn chua, coa, copala, tata azufre, nifio misterio and incense for the Pacha Mama. Wine and Singani should also be given to the Pacha Mama. The meat from the sacrificed lamb is given to the curandero and he burns the bones. Only when all this is done will the person be saved. Sr. Condori knew that the friend was going to die by reading coca leaves.

Quillacollo (Constantino Rojas)

After reading coca leaves Sr. Rojas told Jacova that her friend had been bewitched by a person who loves her but who she does not love. If she is not cured she will die. The friend should set a table for the Virgen. There should be 12 red candies, 12 coca leaves, San Nicolás bread and wafers (from the church), and burning copala on the table. Only the curandero can cure her.

These interviews only give a glimmering of the world of the curandero. It is evident that many curanderos have a negative attitude toward modern medicine, possibly because they would go out of business if people did not use traditional cures. Often the curandero convinces the person that he has been bewitched, and since the doctors cannot cure this, the person must seek treatment from the curandero. The curandero mixes religion with healing making the people believe that a cure is not possible without the blessing of the Virgen or the Pacha Mama.

Only the curandero can bring about this blessing, the doctors know nothing about this.

The curandero may be effective in curing some psycho-somatic diseases. He understands the mentality of the people he treats and knows how to produce a strong psychological effect upon them. This is an area where the año de provincia doctor cannot compete with the curandero. The people relate well to the curandero and trust him. Often they do not trust the doctor who is a complete stranger to them. The fact that the año de provincia doctor is changed every year does not help the situation.

The danger in the practice of traditional medicine is that if a person has a serious condition, he usually doesn't know how serious it is until he sees a doctor as the last resort. By the time a person gets to the doctor it is usually too late to change the course of a disease, and often the individual dies. If the person dies at the hospital, the people think that it is the doctor's fault, and end up trusting the doctor even less.

The contrast is very great between traditional and modern medicine. The gap between the two must be bridged if a rural health delivery system is to be successfully developed. Discovering ways and means of incorporating the curandero into a rural health system is of high priority. It cannot be doubted that the curandero exercises a great influence on the health practices of rural communities. Therefore, the curandero should be taken seriously.

An in depth study of curanderos and other traditional practitioners by a team of anthropologists and trained Quechua speaking helpers is

highly recommended.

However it must be kept in mind that the influence of the curandero is not the only factor discouraging people from utilizing modern methods of healing. In many cases the gap between traditional and modern medicine is perpetuated by the aflo de provincia doctor. The doctor is only in the community for a short time, does not understand the mentality of the people, and is often absent. He does not become involved with the community, but rather remains isolated and a stranger. In many of our interviews we found that the aflo de provincia doctor knew very little about the community. Usually the doctor sees his year in a rural area only as something that must be done in order to receive his credentials and start practicing in the city.

Understanding the socio-cultural aspects of campesino life would be the first step in gaining acceptance and bridging the gap. A beginning could be made if the health professionals were to change their attitudes and practices regarding campesinos. Often class prejudices are the cause of communication breakdown between the two groups. The professional will have to learn to treat the campesino with respect, and the campesino must learn not to fear the professional. Once these groups can relate to each other on a friendship level rather than on a patron-servant basis, then the gap will start to close. Once the campesino can trust and confide in the health professional, he will start utilizing modern methods of healing. As long as the professional continues to reject the campesino's way of life and refuses to acknowledge the importance of his customs and traditions, the gap will never be bridged.

2. Parteros

Parteros are people who have learned to deliver babies through experience. They are often competent in doing normal deliveries, but do not know what to do when complications arise. If the birth is difficult, and the partero cannot handle the situation, the mother may go to a health facility if there is one nearby. However, most of the communities are far from the existing facilities making it impossible for the mother to travel. In these cases the child or mother, or both may die due to inadequate medical care, and the inaccessibility of medical facilities. Often the husband, mother, or relative of the woman will assist in the birth.

a. Following is an explication of a normal birth in rural areas:

- 1) Before the birth, a tea is made from one of the following substances and mixed with Singani (whisky): wheat, garbanzo, pumpkin stem, parsley root, or orange flower.
- 2) Next, the woman is bound around the waist with a tight girdle
- 3) The person assisting in the birth pushes down on the uterus while the woman is squatting
- 4) A sheep skin with some rags on it is placed under the woman for the baby to be expelled upon
- 5) The cord is then cut with a piece of clay pot (it is thought that the child will wear out his clothes faster if the cord is cut with a knife or scissors)
- 6) The woman remains squatting until the placenta is expelled
- 7) After the birth, a tea of remero is given to ease the pain and strengthen the body.

b. Abortians

Teas are made from the following herbs for women who want to abort: floripondio, eucalyptus, pine or yanachski. It is said that some women abort after drinking one of these teas, however if the woman is weak then she can die. Others ways of abortian are said to be: 1) carrying heavy loads on ones back 2) desiring a certain food and not eating it 3) tying a girdle very tightly around the waist.

3. Medicinal Herbs

1. Stomach-ache: teas are made from the following herbs:

- | | |
|-------------------------|------------------------|
| a. <u>Bayco</u> | f. <u>Bomero</u> |
| b. <u>Orégano</u> | g. <u>Hierba buena</u> |
| c. <u>Manzanilla</u> | h. <u>Ajino</u> |
| d. <u>Perejil</u> | i. <u>Sunch'a</u> |
| e. <u>K'ita Perejil</u> | j. <u>Khana</u> |

2. Head-ache and fever

- salve made from hoja santa
- papa rusa cut thin, soaked in vinegar and used as a salve
- urine is stored for a few days and applied to the head or body in the case of fever.

3. Aching Bones

- malle leaves are toasted with urine in a clay pot and the solution is applied to the affected area as a salve.

4. Sprains

- saiza tola leaves are toasted with urine and used as a salve.

5. Heart Pains

- a tea of formill is given first thing in the morning

- b. One petal from flowers of different colors is put in water and left to stand overnight outside. In the morning the patient should drink the water.
6. Kidneys
- a. tea made from leaves of amor seco
7. Liver: a tea is made from one of the following herbs
- a. schicori c. linasa
b. lanten lanten d. cola de caballo
8. Ulcers
- a. a tea is made from the leaves of yuraj wasa
9. Cough: a tea is made from one of the following herbs
- a. flor de retama
b. flor de pascua
10. Nerves
- a. garlic tea
11. Measles
- a. silkive
12. Wounds
- a. the stem and root of romasa is applied to the wound in order to purify the blood.
13. Tooth-ache
- a. arrayan
14. Mouth Sores
- a. Pampa pampa
15. To call the Facha Naga or the Virgen the following should be burned:
- a. oca
b. cogala
c. incense.

E. Institutional Summary

Government Institutions

1. Ministry of Health

a. Health Facilities and Personnel in the Valle Alto and Valle Oeste

Centro de Salud Hospitales

1. Arani: 1 doctor, 1 auxiliary nurse, 1 portero, 1 cook
22 beds
2. Punsta: 2 doctors, 1 dentist, 3 auxiliary nurses, 1 midwife,
1 ambulance driver, 1 cook 2 porteros
40 beds
3. Cliza: 1 doctor, 1 dentist, 1 graduate nurse, 2 auxiliary
nurses, 1 portero, 1 servant, 1 ambulance driver
12 beds
4. Tarsta: 1 doctor, 1 dentist, 2 auxiliary nurses, 1 cook,
1 ambulance driver
6 beds
5. Capinota: 1 doctor, 1 dentist, 2 auxiliary nurses, 1 sanitary
technician, 1 portero, 1 cook
10 beds

According to the Ministry of Health, there is supposed to be a/
sanitary technician in each Centro de Salud Hospital. We found this
to be the case only in the Capinota hospital.

Puestos Médicos

1. Quillacollo: 2 doctors, 2 ^{GRADUATED} auxiliary nurses, 3 auxiliary nurses,
ambulance driver
2. Vinto: 1 doctor, 1 dentist, 1 auxiliary nurse
2 beds
3. Sipe Sipe: 1 doctor, 1 dentist, 1 auxiliary nurse
4. Arque: 1 doctor, 1 dentist, 1 auxiliary nurse
3 beds (without mattresses)

Postas Sanitarias

- | | |
|-----------------|---------------|
| 1. Villa Rivero | 4. San Benito |
| 2. Ucureña | 5. Anocsire |
| 3. Santibñes | 6. Charemoco |

Each posta sanitaria has an auxiliary nurse who lives in the community. There is also a posta sanitaria in Tiataco-- the nurse from the Tarata Centro de Salud Hospital visits three times a week.

b. Environmental Sanitation

Environmental Sanitation has a one year program ending in 1974 to install 720 latrines, 24 septic tanks, and 20 wells in the Cochabamba Valley. As of October the following projects were reported as completed in the Valle Alto and Valle Oeste:

Province	latrines	septic tanks	wells
1. Arani	70	6	0
2. Tarata	80	6	2
3. Quiliscollo	120	6	12
4. Parotani	84	2	4

It was not possible to obtain specific information regarding the names of the communities where these projects were completed. In the communities visited where latrines had been installed, the people did not know which institution had sponsored the project. Therefore, it was not possible to verify the data.

More personnel and transportation facilities are needed if this program is to be effective. At present the 12 environmental sanitation technicians employed by the agency are not being utilized to maximum capacity due to lack of vehicles. There is only one truck and one van

available for the use of the technicians.

c. Maternal and Infant Care

There is no rural maternal infant care program at present. A program for the city of Cochabamba is still in the planning stages. The director, Dr. Montesinos, is interested in collaborating with maternal infant care programs in rural areas. He is interested in doing a maternal-infant care pilot project in the Valle Oeste utilizing existing Ministry of Health resources. He says that UNICEF is interested in collaborating with materials and equipment.

In these two areas the ratio of health personnel to population is extremely inadequate.

	Valle Alto	Valle Oeste
Doctor/population	1/30,000	1/22,166
Dentist/population	1/50,000	1/32,250
Nurse/population	1/11,530	1/13,300

Valle Alto approximate population: 150,000

Valle Oeste approximate population: 133,000

The ratio of doctor to population in the United States is approximately 1/750, and in Puerto Rico 1/1,600. These figures contrast greatly with Valle Alto's 1/30,000. Of course it is not always relevant to compare figures of this sort between countries of different health resource capacity. Nevertheless, the contrast gives an indication of the extreme need for more health personnel in these two areas.

Although there are four Centro de Salud Hospitales in Valle Alto as compared to one Centro de Salud Hospital in Valle Oeste, there is a wider distribution of doctors in Valle Oeste. The Centro de Salud Hospitales in Valle Alto are concentrated within a distance of 40 kil. (Arení to Tarata). Whereas, in Valle Oeste the doctors are distributed over a distance of approximately 100 kil. (Quillacollo to Arque). All the doctors of Valle Alto are located in the province capitals.

There is very little rural outreach in these two areas. Health personnel have the tendency to wait for patients to come to them. There is very low utilization of health services in both areas. Insufficient drug supply and inadequate equipment characterize the Centros de Salud Hospitales and the Puestos Médicos. Doctor and Dentist absenteeism appears to occur frequently in these two areas. Sporadic supervision is the norm. There is no rural maternal infant care program except for the Mothers' Clubs, and there are only 4 mothers clubs in Valle Alto and 5 in Valle Oeste. The existing small scale environmental health program is ineffective, and even if it were to meet it's goals for 1974, this would not make a dent in the vast environmental health needs of the area.

2. School of Medicine

The School of Medicine plans to start a 3 year community medicine project in the Valle Alto. The main objective of the project is to train medical students in community medicine and to up-grade the health delivery system in the area. The project will be initiated in January of 1975, and student participation will begin in March. 40 students will participate in the project from the disciplines of pharmacy, dentistry,

and medicine. The Kellogg foundation is giving \$US 54,00 a year for the salaries of the full-time personnel participating in the project. The professors will participate on a voluntary part-time basis. A new hospital is being planned in Punata which will serve as the administrative center for the project. The existing Ministry of Health facilities will also be utilized.

3. Ministry of Agriculture

The main emphasis of the program is to give technical assistance to farmers and ranchers. There are five extension agents located in Punata, Cliza, Tarata, Capinota, and Quillacollo. All the extension agents have university degrees in agricultural engineering. Each agent has a jeep to facilitate his work and increase his mobility in his area of jurisdiction.

The agents are supervised indirectly in that they send monthly plans and reports to the office in Cochabamba. They also receive periodic visits from their supervisor, however in some areas visits are sporadic.

There are two agriculture experimental stations in the area: in San Benito (Valle Alto), and Payrunani (Valle Oeste). These stations are primarily involved in experimenting with different types of plants in an effort to determine which ones are best suited to the area, render higher production, and are of greater nutritional value. The stations do not have any outreach programs. Their findings are communicated to the farmers through the extension agents. There exists good potential here for developing a more community oriented program. If both the stations and the extension agents were involved in communicating new agricultural methods to the people, then modern techniques could be implemented on a larger

scale. At present only a small percent of the population are being reached by the 5 extension agents.

The director of Agriculture Extension, Sr. Lucio Antezana, sees improved health as an objective of the program. It is expected that a higher quality and quantity of food will result in improved nutrition and higher economic gains for the farmers. The director is receptive to collaboration of efforts with health programs.

4. Community Development

The Community Development Office promotes cooperatives, train women in home economics, and men in leadership, and undertakes community projects. The community projects include the building of schools, canals, postas sanitarias, roads, bridges, latrines, and water pumps. Community Development sponsors a training institute in Paracaya (Valle Alto) where courses are given on different subjects to groups of campesinos. After the training sessions the trainees are supposed to return home and organize groups on a voluntary basis. Once the people are trained there is no follow-up supervision of their activities in their home communities. If a supervision system could be initiated, and some incentives built into the program, the local groups could function on a regular basis. At present the trainees go home, and usually become inactive.

Community Development sponsors 2 home economics specialists and 2 assistants, and 1 cooperative technician and 1 assistant in Arani. In Tarata there is 1 cooperative technician. The cooperative technicians work with cooperatives and pre-cooperative groups in the two areas, and the home economics specialists have organized women groups.

There exists a great potential here for going into health work.

Special courses could be given at Paracaya for health promoters. After the course each promoter would return home and become involved in health education activities. Supervision would be necessary if such a program were to be effective. There is also good potential for construction projects such as letrines, wells, and postas sanitarias.

5. Servicio Geológico de Bolivia y Naciones Unidas (GEOBOL)

GEOBOL is making studies of subterranean water sources in the Valle Alto and the Valle Oeste. At present water has been tapped in La Chujlla, Monte Negro and Irquircollo in the Valle Oeste and in Paracaya, San José, and Wasa Mayu in the Valle Alto. There is a serious water problem in the Valle Alto in relation to irrigation. The water is too salty for certain crops and of poor quality. Pumps and canals are needed before it can be utilized. Well water is not always salty depending on the area. There is less of a problem in the Valle Oeste. Lake water is used from the Valle Alto, subterranean sources, and the Rio Rocha.

6. Acción Cívica de las Fuerzas Armadas

Acción Cívica is a program sponsored by the Armed Forces of Bolivia involved in giving assistance to rural communities for public works projects. The assistance is usually in the form of materials, transportation, and in some cases labor. Local authorities and teachers must solicit help before December of each year. Acción Cívica is currently helping with the construction of 3 schools and 1 well in the Valle Alto and Valle Oeste. There is some potential here for obtaining assistance for the construction of postas sanitarias, and environmental sanitation projects.

7. Corporación de Desarrollo de Cochabamba (CORDECO)

The main objective of CORDECO is to promote social-economic development in the department of Cochabamba, and to carry out public works projects in rural and urban areas. Other objectives of CORDECO are 1) coordinate activities with other institutions that are working with cooperatives 2) back-up programs that are already being carried out before starting new ones 3) organize industrial cooperatives 4) coordinate with the University.

CORDECO is currently involved in a pilot project in agriculture development in the Tarata area. The project involves forming a production cooperative utilizing 1,000 hectares of land for the cultivation of cash crops. An irrigation system will be installed as part of the project. CORDECO also plans to start a rural development project in January 1975. The objective of this project is to train the campesino for certain types of employment, generate rural employment opportunities, and promote activities that will strengthen the rural population in an effort to diminish the gap between the rural and urban populations.

CORDECO is mainly interested in promoting economic development, however there is good potential for coordination of efforts with health programs.

8. Ministry of Rural Education

The Rural Education District Office is responsible for the administration and supervision of 76 nuclear schools and 745 satellite schools in the department of Cochabamba. There are 34,460 students and 1,946 teachers in the district. A third of the nuclear schools and a fourth of the satellite schools, are located in the Valle Alto and Valle Cesta.

A third of the rural students and teachers are located in the two valleys.

The rural teachers represent a tremendous man-power resource potential for intersectorial community development projects. At present they are the only group of trained personnel working in all rural areas. The teachers only work half day in the schools, and therefore there are good possibilities for incorporating them into a rural health program on a part-time basis.

It is significant to note that geographically the Valle Alto is 25 miles long and 15 wide. In this small area a fifth of all the students and teachers are located. About half of the teachers are concentrated in the nuclear schools, indicating the importance of nuclear schools and the strategic practicality of incorporating the nuclear facilities and teachers in a rural health program.

In the Valle Alto all of the nuclear schools have a hygiene teacher, and in the Valle Oeste only half of the nuclear schools have one. Some of the hygiene teachers are graduates of the Ucurefia Normal School and others have been appointed to the position. Since there have only been 2 years of graduates from the Ucurefia School, there are not enough trained hygiene teachers to go around. The hygiene teachers have three basic functions: 1) teach hygiene to the students 2) promote health in the community, and 3) be in charge of a posta sanitaria. Unfortunately not all of the hygiene teachers are actively carrying out these functions. Many teachers are not involved in promotion activities in the community, and if there is no posta sanitaria in the community they cannot very well be in charge of one.

In spite of these difficulties, the hygiene teachers should be among

the first to be incorporated into a rural health delivery system. They may be a key factor in a low-cost health program for rural areas.

Rural Schools	Number in the department of Cochabamba	Percent in Valle Alto	Percent in Valle Oeste
Nuclear Schools	76	21%	12%
Satellite Schools	745	15%	11%
Teachers	1,949	21%	11%
Students	34,460	19%	12%

9. Ministry of Urban Education

The Urban School District Office is responsible for the administration and supervision of all the urban schools in the department of Cochabamba. During our various visits to this office we were unable to obtain the data related to the urban schools in the province of Cercado* because its' tabulation was not completed. However, we did obtain all the relevant data of the urban schools in the remaining 12 provinces.

Following is a chart showing the distribution of schools students, and teachers, and the percent located in the Valle Alto and Valle Oeste.

Urban Schools	Total for all provinces except Cercado	Percent in Valle Alto	Percent in Valle Oeste
Schools	109	38%	38%
Students	31,773	40%	32%
Teachers	1,681	38%	31%

* A large percent of the urban schools are located in the city of Cochabamba, which is in the province of Cercado.

10. Normal Schools

There are 4 normal schools in the Valle Alto sponsored by the Ministry of Rural Education, and 1 in the Valle Oeste sponsored by the Adventist Church. The normal schools in the Valle Alto train teachers in health, music, physical education, and general education. The school in Ucureña specializes in health education, teaching the following subjects as part of their curriculum: first-aid, environmental health, nutrition, maternal and infant care, sanitary education, and biology. The other normal schools offer courses in first-aid and hygiene. The Adventist Normal School in Vinto has recently been started, however within a three year period there will be 120 students.

There is excellent potential here for going into health work. The normal school students could have an active role in an integrated rural health system. They also represent a valuable man-power resource for health research projects, as community organizers, and health educators in rural areas.

11. National Social Development Council (JNDS)

The National Social Development Council works primarily with mothers clubs and social work activities in the marginal regions of the city of Cochabamba. The agency has no plans for going into health work in rural areas.

12. Comité Interinstitucional de Coordinación para el Desarrollo del Cooperativismo en Cochabamba (CICORDECOOP)

The main function of CICORDECOOP is to coordinate activities of 18 institutions that are working in the department of Cochabamba. Some of the objectives of CICORDECOOP are: 1) to coordinate programs and

projects relating to the formation of cooperatives, analyze and evaluate the activities in the cooperative sector, and program their development.

2) stimulate collaboration among the institutions involved in the development of cooperatives 3) give priority to the development of cooperatives in rural areas. CORDECO collaborates with CICORDECOOP in the promotion and development of its activities.

Voluntary Agencies

1. Catholic Church

It was not possible to obtain detailed information about the priests and nuns working in rural areas, or about the activities they undertake for the benefit of the people. We did meet some nuns and priests in the larger communities in the area. The nuns in Santibañez and Itapaya are involved with health work, and they have also been active in Tolata. Further study needs to be done to determine the potential for collaboration of efforts in health projects.

In addition to the clergy, there are 2 institutions working in rural areas that are sponsored by the Church: CARITAS, and Radio San Rafael. Following are summaries of the programs sponsored by these 2 institutions.

2. CARITAS

CARITAS is mainly involved in distributing Food for Peace to schools and mothers clubs. The only direct involvement is guidance and supervision of 52 mothers clubs in the department of Cochabamba. CARITAS estimates a total of 11,360 beneficiaries for the mothers club program. There are many drawbacks in the distribution of food to schools, the

main problem being a lack of supervision. CARITAS is considering changing their program, and directing their resources into more service oriented projects.

There exists good potential for going into health work, especially by expanding the mothers club program, and using the food as an incentive for people to utilize health services.

3. Radio San Rafael

Radio San Rafael broadcasts programs in Quechua 8 hours daily. The main objectives of the programs are 1) promote the values and culture of the campesino 2) help the campesino to become a part of the total society 3) enable the campesino to participate in an educational program that is meaningful to him 4) motivate the campesino to better utilize the resources available to him 5) help the campesino fight for justice and equal rights, and 6) help rural communities fulfill their most pressing needs.

The major emphasis of the program is literacy training taught through the radio by means of trained voluntary leaders. The leaders are chosen by their communities to attend periodic institutes where they learn literacy teaching methods. They then return to their communities and gather those interested into a course. The students listen to the radio program, and the leader explains anything that they do not understand.

This program has good potential for expanded health education broadcasting. Further study should be made to see if the leaders could be utilized for health promotion activities in coordination with a broadcasted health education course.

4. National Federation of Cooperatives

The National Federation of Cooperatives sponsors 6 cooperatives in the Valle Alto and 3 in the Valle Oeste. 3 more cooperatives are being organized in the Quillacollo area for the factory workers of Pil, Quimbol, and Manaco. Most of the control and supervision of the cooperatives is done from the national office in Cochabamba. There is only one extension agent who is responsible for all of Bolivia, and therefore few visits are made to the cooperatives. Plans to begin a health program are being made-- in which drugs will be sold to the members of the cooperative at a low cost. There exists potential here for expanding the health program to include more health benefits for the members.

5. Alfalit Boliviano

Alfalit is sponsored by the Social Action Department of Evangelical Churches with international headquarters in Costa Rica. Alfalit has been working primarily in urban areas in literacy programs, basic adult education, and community development. Last year Alfalit made certain covenants with the government enabling the agency to expand its program to include community work in rural areas. Alfalit plans to start the rural program in January 1975. The project will involve literacy training in rural communities throughout Bolivia. Within a 5 year period Alfalit plans to incorporate, through the assistance of the Ministry of Education, 15,000 teachers from the rural education system. Alfalit will receive \$US 220,000 from the Bernan Government through their sponsoring agency.

There are many possibilities for developing health education programs through the teachers. This may be a way of reaching the adults in

rural communities with health programs.

6. Instituto de Educación para el Desarrollo Rural (INEDER)

This institution was founded in 1973, and is sponsored by a religious organization in Holland. The main emphasis of the program is to educate the campesino through a process in which development will take place through a continued learning-action, action-learning situation. INEDER is sponsoring 2 experimental centers in the provinces of Quillacollo and Carrasco. 8 professionals are working with the communities in an effort to determine the needs of the communities, and discover ways of fulfilling these needs with the resources available to them. The professional personnel provide educational experiences in nursing, agriculture, the forming of cooperatives, art, literature, and child education. The results of these experimental centers will be published in 1975. There is good future potential for collaborating with INEDER in health work. The agency is interested in health training, and there may be possibilities for expansion of their program to include nursing courses for more rural communities.

7. Centro para el Desarrollo Social y Económico (DESEC)

DESEC is the coordinating agency for 5 organizations that are involved in rural promotion through community organization and the giving of technical services in various fields. Following is a brief description of the organizations under DESEC:

- a. Asociación de Servicios Artesanales y Rurales (ASAR): to give technical, financial, and administrative services to agriculture, teaching and art work in rural communities, and to help commercialize their products. At present ASAR sponsors artisan groups in the

provinces of Tarata and Quillacollo, and agriculture groups in Carrasco and Arani provinces.

- b. Acción Rural Agrícola de Desarrollo Organizado (ARADO): to help the campesinos form groups and cooperatives in an effort to improve their standard of living and help them become socially integrated. ARADO works with the agriculture groups in Carrasco and Arani.
- c. Asociación de Vivienda Popular (VIPO): to give technical services to rural communities in the construction and improvement of homes.
- d. Servicio Popular de Salud (SEPSA): to offer medical services through a medical insurance system. At present there is only one clinic located on the outskirts of the city of Cochabamba.
- e. Instituto Campesino de Educación(ICE): to train leaders by giving them technical and general education in different fields through short courses. There is a training institute in Saticollo (Quillacollo province) that is used for this purpose, and also some local centers.

There is excellent potential for going into health work through the artisan and agriculture groups. There are also possibilities for health education through ICE, and for health programs through SEPSA.

At present SEPSA has no rural programs, however, DESIC is interested in expanding the program to work through cooperatives offering health care as an indirect benefit to the members. There are also possibilities to work through VIPO in an effort to control Chagas Disease through better home construction resulting in the elimination of the vinchona.

8. FOTRAMA

The FOTRAMA Cooperative sponsors 5 artisan groups in the Valle Alto with a total of 600 members. FOTRAMA sponsors a clinic in Areni for the members of the cooperative. A doctor from Cochabamba visits the clinic once a week and gives classes to the women, plus medical care. There is good potential here for forming mothers clubs with the members of the artisan groups. There are also possibilities for expanding the health program to include more clinics in other communities where centers are located.

9. Adventist School

The Adventist Church has a school in Vinto near Quillacollo. There are 300 students in grades 1 through 12, and 30 students in the Normal School. The Normal School has recently been established and within a 3 year period will have 120 students. The school is not involved in any health programs at present, however the director, Sr. Febo Basanta, is interested in collaborating in a health work. The school could serve as a center for training rural health teachers or health promoters for the Valle Oeste. The school is also interested in setting up a clinic on campus and possibly doing outreach work through a mobile clinic service.

10. COMBASE

COMBASE is an evangelical organization working primarily in the marginal regions of the city of Cochabamba. COMBASE sponsors a clinic and an orphanage in the south-west section of the city, and is planning to build a maternity hospital. There are also plans

to start an ambulance service to the Chapare. COMBASE is receptive to collaboration with other institutions and would be interested in doing more rural work if there were more funds.

11. American Institute

The American Institute is sponsored by the Methodist Church, and is primarily involved in educational activities in the city of Cochabamba. The school sponsors a special educational program for poor neighborhood children. The program includes health and other benefits for the children and their families. The social worker in charge of the social aspects of the program is very receptive to collaboration of efforts and would like to do some work in the Valle Alto in the future. Further study is needed to determine to what extent the American Institute could collaborate in a rural health program.

12. Methodist Church

The Methodist Church is sponsoring a community development project in the Chapare. They would like to work with health programs in other areas and recognize the Valle Alto as an area of great need. Due to lack of funds their program cannot be expanded at present. The pastor, Mr. Jaime Bravo, is very receptive to coordinating efforts with other institutions in terms of social action projects.

F. Potential of Community Based Organisations for Health Work

1. Lions and Rotary Clubs

There are Lions Clubs in the province capitols of Punata, Quillacollo, and Capinota, and a Rotary Club in Quillacollo. These clubs have demonstrated an interest in community cooperation and development. The Lions Club in Punata has donated beds, cooking utensils, and various other materials to the Centro de Salud Hospital. In Capinota the Lions Club donated a clock for the church tower.

There exists good potential for these clubs to collaborate in the promotion of a health program. They serve as an excellent means of communicating and promoting health objectives and services to the professional class in the three province capitols.

2. Pro-development Comitties

Pro-development comitties include all local groups that have organized themselves in an effort to complete a project of common need in a given community. These groups often build schools, postas sanitarias, wells, dams, and churches. Once the project is completed then the committee dissolves. These groups have good potential for building health facilities. It is often easier to motivate people to build a building than to participate in other types of community activities.

3. Mothers Clubs

Mothers clubs have excellent potential for health work, since the emphasis of the program is already health oriented. However, in most areas the mothers need an incentive to motivate them to attend meetings. This incentive has been in the form of food given by CARITAS to the

clubs. When the food was discontinued in Tarata the mothers club fell apart. At present CARITAS is only giving food to 8 clubs in the Valle Alto and Valle Oeste. The club in Uourefa functions without the food incentive, possibly due to the active participation of the sño de provincia doctor from Cliza. CARITAS is considering the possibility of channeling all the food through the mothers clubs instead of the schools. If this is done, there could be more mothers clubs. At present the 8 clubs only serve a small percent of the population.

4. Sports Clubs

In many communities the youth have organized sports clubs. There is good potential here for going into health work. The youth meet mostly during school vacations for physical education training and sports tournaments. The youth could collaborate with health projects during vacations. They could also become involved in a physical fitness program or a nutrition program, both of which have a close relationship to sports performance. The sports club in Cliza donated garbage cans to the community, indicating that these clubs can become interested in health projects.

5. Artisan Groups

All of the artisan groups in the area are made up of women. The women get together to knit and weave, then sell their work through Potrama or DESEC. These groups could possibly also function as mothers clubs. Since the groups are already organized, all that would be needed is a health team to go and give educational talks and medical examinations. There are 10 groups in the Valle Alto and 5 in the Valle Oeste-- all of which are potential mothers clubs.

6. Savings and Loan Cooperatives

In the Valle Alto and the Valle Oeste there are 9 cooperatives serving 2,018 people. The National Federation of Cooperatives plans to sell drugs to the members at low cost. It seems that more could be done to offer health benefits to the members of the cooperatives, such as medical services and preventive medicine programs. The national office is interested in health, and there is good potential for going into health work. The director of the national office in Cochabamba offered the use of their centers for health programs and activities.

7. Agriculture Cooperatives

There is good potential for going into health work through these cooperatives, especially in the promotion of gardens and crops having high nutritional value. At present most of the cooperatives are not active. So far the emphasis has been on cash crops, and the active cooperatives are mostly involved in selling the milk they produce to P.L. Community Development has plans to activate many of the cooperatives that functioned at one time. If this is done there will be a greater potential for health work as more cooperatives become active. Another possibility would be to include health benefits in the advantages of belonging to a cooperative.

8. Parents Committees

In every community where there is a school, there is a Comité de Padres or a Junta de Auxilios Escolar. This committee is responsible for the construction and up-keep of the school. At present the committees

do not function regularly, only meeting when there is a specific need for community involvement. However, the committee could be organized and supervised by the teacher, evolving into a permanent committee that would function regularly. Once organized, this committee could have good possibilities for going into health work. If the teacher was involved in a health program, he could motivate the community through the parents committee to become active in community projects.

9. Civic Clubs

We encountered 7 civic clubs in the communities surveyed. These clubs are usually organized in conjunction with the Alcaldía Municipal. They undertake projects for the benefit of the community, and see to the well being of the people. There exists good potential here for going into health work, since the civic clubs are usually interested in projects that will benefit the community.

10. Radio Clubs.

We only visited one community where a radio club had been organized, However, Radio San Rafael sponsors 80 radio clubs in the department of Cochabamba, and there are a total of 135 local leaders who assist in the functioning of the clubs. The leaders receive special training courses given by Radio San Rafael. The program appears to have good potential for expanded health broadcasting. At present only 15 minutes a day are dedicated to health broadcasting. Further study should be made to see if the local leaders could be utilized for health promotion activities in coordination with a broadcasted health education course. Currently the main emphasis of the program is literacy training. Radio San Rafael

is sponsored by the Catholic Church, and the Bishop in Cochabamba has very strong views against family planning. Any health education course transmitted by the Radio could not include teachings related to family planning.

Nuclear Schools and Satellites

A. Chocfiscollo

1. Aporte
2. Chilimarca
3. Linde
4. Padojs
5. Coffa Coffa
6. Cepaca-chi
7. Pospocollo
8. La Florida

B. Bells Vista

1. Mollé Mollé
2. Paucar Pata
3. Ironcollo
4. Marquina

The following schools are located north of Bells Vista, not on map

5. Portero
6. Tembo
7. Liriuri
8. San Miguel
9. Jellpe Cueva
10. Leppis
11. Cruzani

C. Esirumani

1. Felsuri
2. Illatcu
3. La Chulla
4. Anocsire
5. Machajmarca
6. Caja Trencani
7. La Llave
8. Palcapampa
9. Cospicancha

D. Vilcas

1. Cotalla
2. Pantiyata
3. Paicaco
4. Vilomilla
5. Cochea

F. Perotani

1. Choquani
2. Chitupampa
3. Itapaya
4. Chera Mokho
5. Jaralla
6. Pirque
7. Ichuraya
8. Vaqueria
9. Tjakoruna
10. Llavini
11. Muffani
12. Valentia
13. Coracuba
14. Chapini

H. Playa Ancha

1. Poquera
2. Serco Khuchu
3. Yata Moco
4. Serco Bamba
5. Pelona Pampa

The following schools are in highlands, not on map.

6. Machajmarca
7. Corate Norte
8. Sajpaya
9. Selto
10. Corral Mayu
11. Marcevi
12. Tipani
13. Ucuchi
14. Busca Plaza
15. Cornellis

I. La Chulla no satellite schools

J. Quacum not on map, could not locate.

1. San Francisco
2. Cabrera
3. Loroachusana

(con't)

6. Villoma Calacala
7. Chocspaya
8. Chakeri
9. Capillani
10. Totrani

4. Jatun Moyo
5. Mollini
6. Charagosi
7. Pucarama

E. Collpa

1. Mollie Mollie
2. Amiraya
3. Sorata
4. Sauce Rancho
5. Payacollo

Nuclear Schools and Satellites and Dependencies

A. Huafacota

1. Kuturipa
2. Rocha Rancho
3. Myurina
4. Calacaja
5. Pampa Caurique
6. Chifata
7. Huafacochi
8. Coporaya (off map)
9. Cayacayani (off map)

B. Villa San José

1. Lokjosca
2. Jetun Cotani
3. Milluma
4. Izeta
5. Huerta Mayu
6. La mayka
7. Tailaca
8. Viscachani
9. Juan Vera (off map)
10. Pariguani (off map)

C. Santa Rosa

1. Santa Rosa
2. Villa La Loma
3. Villa Jachs Moco
4. Lequinas
5. Tisteco
6. Mamenaca
7. Villa Mercedes
8. Achiota
9. Arpita
10. Copepuju Nuevo
11. Copepuju Viejo
12. Rya Pampa
13. Villa Cabot
14. Celuyo

D. Mendez Mamta

1. Arenjuos
2. Pampa Mamta
3. Esyculli
4. Pajuni
5. Vilque
6. Pata Churigua
7. Loco Laca.

F. Tolata

1. San Lorenzo
2. San Antonio Tiraque
3. Carcaje Alto
4. Carcaje Bajo
5. Villa Copecabana
6. Angostura
7. Lepia
8. Tjakoloma

G. Chilijchi

1. Tokillo
2. Huasa Rancho
3. Ayoma
4. Chullpas
5. Villa Paz (off map)

H. Ana Rancho

1. Khochi
2. Monte Redondo
3. Chua Loma
4. Chullpas Loma
5. Flores Rancho

I. Huasa Calle

1. Tako Loma

J. Laguna Carmen

1. Estancia Santa Ana
2. Tajsamar
3. Lobo Rancho
4. Laguna Salty
5. Sunchu Pampa

K. Aramasí

1. Pampa Kjai
2. Estancia Blanco
3. Pajpani Grande
4. Pajpani Chico
5. Tajsani

(con't)

E. Santa Lucía

1. Villa Rosario
2. Forvenir
3. Villa Concepción
4. José Sonaylia
5. Perez Rancho

L. Camacho Rancho

1. Cochi
2. Tambillo
3. Tambillo Grande
4. Cochi Laguna
5. Leon Rancho
6. Chirusi
7. Estancia San José
8. Chirusi Collu
9. Chirusi Husñacshu

M. La Villa

1. Vintu Cancha
2. Pucara
3. Mollo Huma
4. Husñakshu Tuti (off map)
5. Alisa Mayu
6. Iluri Chico

N. Collpacinco

1. Villa Evite
2. Estancia Colca
3. Estancia Kollpa Bajo
4. Puca Oreo
5. Linde

The following schools are in the highlands not shown on map

6. Puyu Puyu
7. Saka Saka
8. Cachillera
9. Paca Hussi
10. Jutulaya

O. Khucha Mzela

1. Tojracollo
2. Totoral
3. Lajas Cañadas
4. Husñacots
5. Herrera Cancha
6. Convento Pampa
7. Yana Rumi
8. Husacaru.

III. Recommendations

- A. Suggested locations for administrative centers and sub-centers in a integrated rural health delivery system.**
 - 1. Valle Alto**
 - 2. Valle Oeste**
- B. Recommended Area for a Pilot Project**
- C. Suggestions for an integrated rural health delivery system**
 - 1. Objectives**
 - 2. Description of Integrated Rural Health Delivery System**
 - a. Health Sector**
 - b. Education**
 - i. Rural Education**
 - ii. Urban Education**
 - c. Agriculture**
 - i. Agriculture Extension Agents**
 - ii. Agriculture Experimental Stations**
 - d. Community Development**
 - e. Man-power Training**
 - f. Facilities**
 - g. Integration of Health Practitioners into a Rural Health System.**
 - i. Modern Practitioners**
 - ii. Traditional Practitioners**
 - 3. Community Involvement in Health Programs**
 - 4. Voluntary Agencies**

III. RECOMMENDATIONS

A. Suggested locations for administrative centers and sub-centers in an integrated rural health delivery system.

1. Valle Alto

Punata is recommended as the location for an administrative center for the following reasons:

Pros:

1. The School of Medicine plans to initiate a three year community medicine project in the Valle Alto in January 1975. A new hospital is being planned for Punata, which will serve as the administrative center of the project.
2. Good accessibility from Cochabamba - rápidos every 20 minutes
3. Existence of major market and large area of utilization
4. Some community involvement in health already exists
5. The Paracaya Training Institute is close, and could be used as a training center for health promoters.

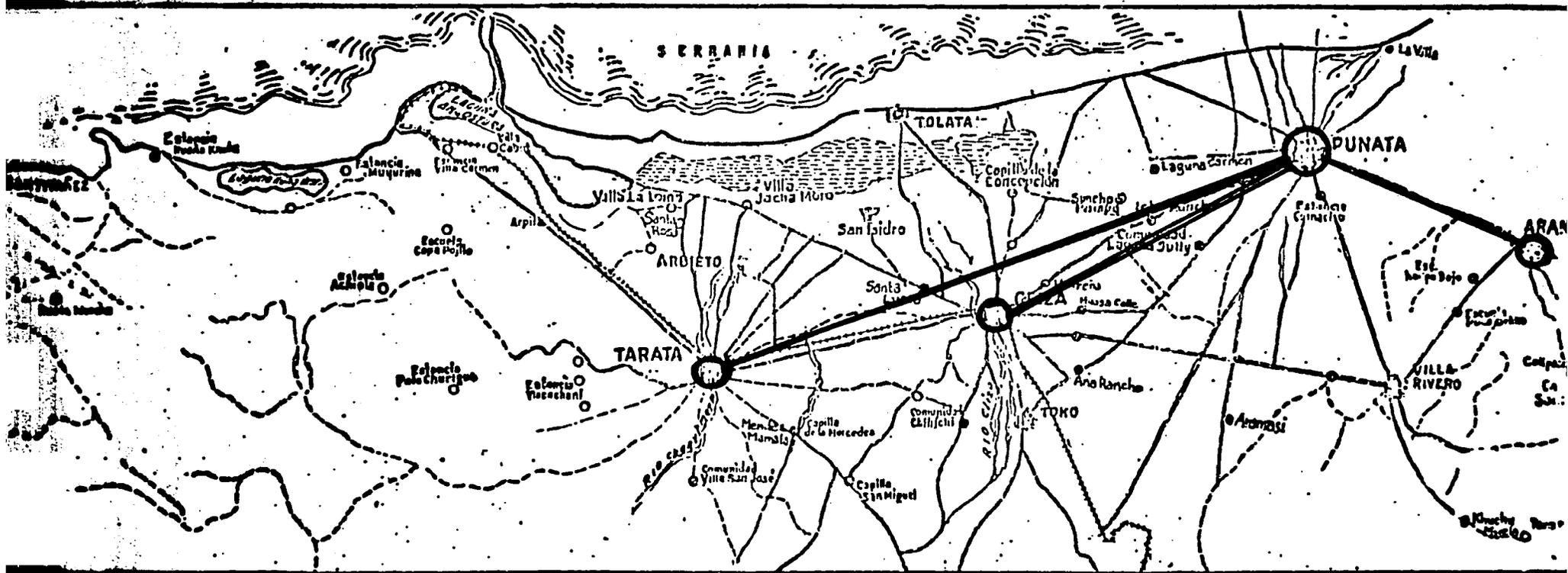
Cons:

1. The province of Punata is not as densely populated as that of Jordan (Punata: 80.34 people per sq. km. and Jordan: 132.69 per sq. km.)
2. Punata is not centrally located for the Valle Alto
3. Sporadic transportation from Tarata andC liza except on market days

Sub-Centers

1. Arendi
2. Oliza
3. Tarata

FIGURE 3.11
 SUGGESTED LOCATIONS FOR ADMINISTRATIVE CENTER
 AND SUB-CENTERS



Punata is being recommended because the University plans to have their administrative center there, and there will be better possibilities for coordination of efforts. However, Cliza is a more logical location for an administrative center due to the high population density (Cliza is in the province of Jordan) and the fact that it is centrally located. There is a new hospital in Cliza that could be expanded if it were to serve as an administrative center.

The University may have chosen Punata because the Mayor is donating money for the construction of the hospital. There have been some problems in connection with the money since it must first go through La Paz, and then be given to the University. Therefore, construction has been held up. There are no funds for equipment, and the University plans to investigate the possibilities of receiving equipment from US/AID. If the University could be convinced to use Cliza as their administrative center, then it would be advantageous for USAID to equip the hospital. If this were the case, Cliza would be the first choice for an administrative center and major hospital in a rural health delivery system for Valle Alto.

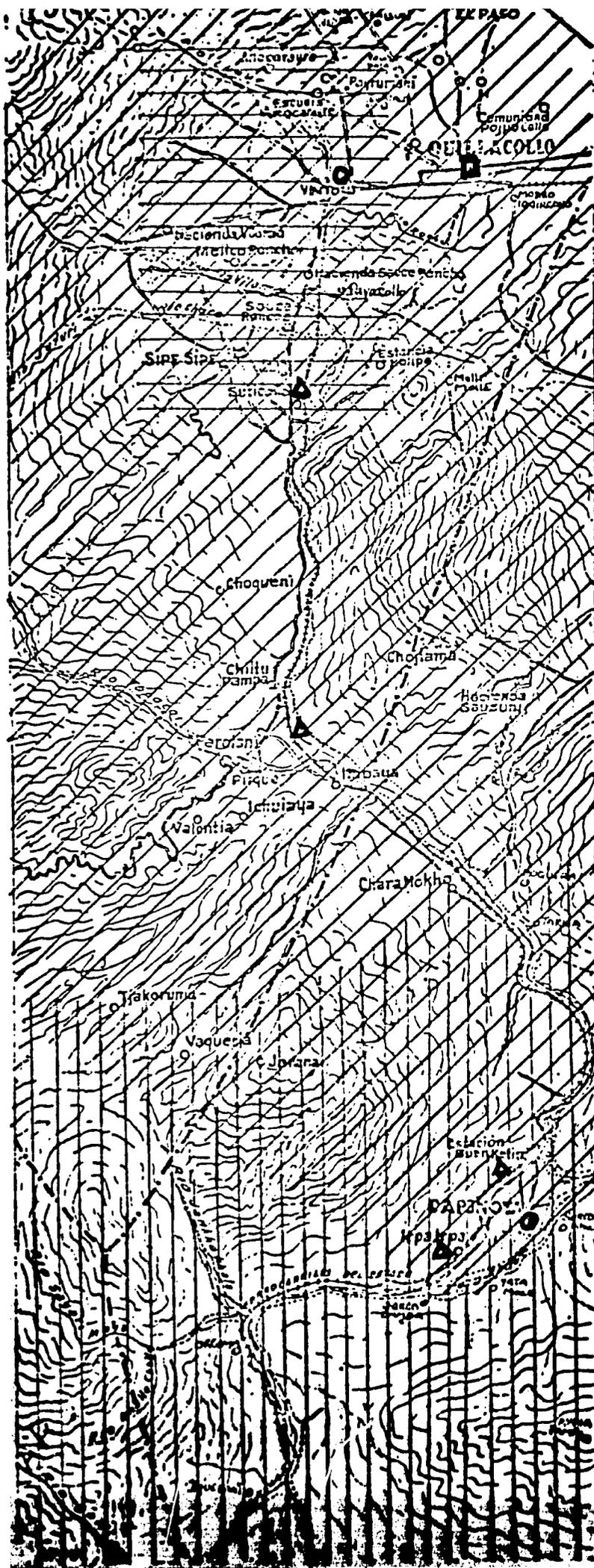
2. Valle Oeste

Quillacollo is recommended as the location for an administrative center for the following reasons:

Pros:

1. The province of Quillacollo has the highest population density. This includes both rural and urban populations (urban and rural: 130.35 people per sq. Km. and rural: 81.73 per sq. Km.)

FIGURE 2.9
 MARKETS AND AREAS
 OF UTILIZATION

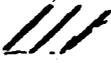


Major Market 

Smaller Markets 

Local Markets 

Areas of Utilization.

Quillacollo 

Vinto 

Capinota 

2. Good accessibility from Cochabamba - there are rápidos every 10 minutes
3. Existence of major market and large area of utilization
4. The Ministry of Health is building a Centro de Salud Hospital in Quillacollo.
5. Proximity of Adventist School in Yinto which could be used as a training center
6. The main road from the Valle Oeste to Cochabamba goes through Quillacollo thus, there is good potential for higher utilization of facilities.

Cons:

1. Quillacollo is not centrally located (Capinota is 2 hours by bus)

Locations of Sub-Centers

1. Parotani
2. Capinota

B. Recommended Area for a Pilot Project

The Valle Alto is recommended as the best area for a pilot project for the following reasons:

1. Higher rural population density than the Valle Oeste.
2. More personnel in health related programs, thus better potential for intersectorial integration
3. There are 16 nucleo centers in the Valle Alto as compared to 9 in the Valle Oeste
4. University involvement
5. Important area politically

6. Existing health facilities are better (4 CSH'S in Valle Alto, and 1 in Valle Oeste)
7. Better accessibility to rural communities
8. Proximity of Community Development Training Institute.

C. Suggestions for an Integrated Rural Health Delivery System

1. Objectives

- a. To increase the efficiency, continuity, quality, and utilization of medical services;
- b. To carry out a continuous rural out-reach program to the postas sanitarias, and the nuclear schools;
- c. Deliver health services through an intersectorial team with participants from health, education, agriculture, and community development sectors;
- d. Increase community involvement in health programs;
- e. Discover ways and means of integrating traditional practitioners into the rural health system;
- f. Coordinate activities with voluntary agencies working in the area;
- g. Train and retrain health workers especially regarding socio-cultural aspects of health care.

2. Description of Integrated Rural Health Delivery System

a. Health Sector

The Centro de Salud Hospitalice would have adequate equipment, a good drug and vaccine supply system, and ambulances. These facilities would serve as the base of operations for an intersectorial team. The members would include

a doctor, a nurse, a health teacher, and agriculture extension agent, an environmental health technician, and a Community Development worker. The team would be involved in out-reach work to all of the nuclear schools and existing postas sanitarias. Each nuclear school community would become an example of rural community development for all its satellite schools, in that each would have: a posta sanitaria, a mothers club, an agriculture project (vegetable garden), an environmental health project (letrines, potable water), and a community organization project.

Each hospital would have 2 doctors and 2 nurses who would take turns staying at the hospital and doing out-reach work. In this way both the hospital and the out-reach program could function continuously and be coordinated.

b. Education

i. Rural Education:

- a. Each Nuclear School should have a posta sanitaria in which the hygiene teacher would be in charge;
- b. An auxiliary team would be formed in the nucleo center with the hygiene teacher, home economics and agriculture teachers as members, and an auxiliary nurse when possible;
- c. The auxiliary team would be responsible for doing out-reach work in the communities where school satellites are located;
- d. The auxiliary team would have the following responsibilities in the satellite communities:
 1. Carry out health education programs,

2. Promote utilization of the posts sanitaria and the services offered there when the health team visits;
 3. Promote health programs such as vaccination, etc.,
 4. Environmental sanitation activities such as letrine projects and potable water;
- e. The auxiliary team in connection with the teacher of the satellite school should choose a member of the community to be trained as a health promoter. His or her functions would be:
1. Promote utilization of health facilities at Nuclear School.
 2. Agricultural promotion in the form of vegetable gardens and nutritional crops,
 3. Health education activities in collaboration with school teacher,
 4. Community development activities,
 5. Environmental sanitation activities;
- f. In every school one teacher would be responsible for health education activities, in collaboration with the community health promoter, and the auxiliary team.
- ii. Urban Education (province capitals and major towns)
- a. The physical education teachers have had some courses on hygiene and first-aid at the Normal School, and could be further trained to function as health teachers in urban schools;
 - b. Classes on health should be included as part of the

curriculum;

- e. The health team could give periodic conferences on different subjects related to health for high school and junior high school students.

c. Agriculture

i. Agriculture Extension Agents

The extension agents would have the following functions:

- a. Increase the prestige of the health facilities through his contact with the farmers;
- b. Collaborate with the health team in rural out-reach by having agriculture projects in the communities where nuclear schools are located;
- c. Collaborate in transportation to out-reach areas;
- d. Promote crops that would meet nutritional needs such as vegetable gardens and fruit trees.

ii. Agriculture Experimental Stations

The functions of experimental stations would be increased to include:

- a. Carrying out more studies on crops with high nutritional value;
- b. Organizing institutes or courses for the farmers where they could learn directly about the best agriculture methods and nutritional crops. (Possibly these farmers could become local agriculture promoters).
- c. Becoming involved in rural out-reach in areas

where the extension agent is not working (regional service centers);

- d. Initiating an educational program through available media such as radio, flyers, etc.

- d. Community Development

- i. Where personnel are located, they should collaborate with the health team;
- ii. Utilize the training institute in Feracays for teaching local health promoters;
- iii. A system of supervision and incentives should be built into the health promoter program;
- iv. Collaboration in the construction of postas sanitarias and in environmental sanitation projects.

- e. Man-Power Training

- i. The man-power for an integrated rural health system would be: teachers, health personnel, agriculture agents, community development personnel, and local leaders (health promoters);
- ii. The intersectorial team would be trained at the administrative center, or the Community Development training center in team concept, their role in the health system, and health education. The supervisor from the administrative center would give the team periodic follow-up training and supervision.
- iii. The auxiliary team would be trained in special courses at a training center, and would receive follow-up training

and supervision from the health team.

- iv. The local promoters would also receive training at special courses, and receive follow-up training and supervision from the auxiliary team.

f. Facilities

- i. Existing health facilities

- ii. Schools

- iii. Paracaya Training Institute or Adventist School

g. Integration of Health Practitioners into a Rural Health System

- i. Modern Practitioners

There is good potential for integrating the doctors and dentists into a rural health program. The health professionals in Punata and Quillacollo say that their practices have dwindled considerably due to the fact that the CRESS and Ministry of Health facilities have attracted many of their patients.

- ii. Traditional Practitioners

The ideal situation would be a total integration of the traditional practitioners into a rural health system.

However, there is a wide breach between traditional and modern medicine, and prejudices on both sides. Further study is needed in an effort to determine to what extent the traditional practitioner could be integrated into the health system. (see part II-D on Curanderos)

3. Community Dvovement in Health Programs

a. Parents Comitties

- i. Construction and maintenance of a posta sanitaria;
- ii. Become active through the guidance and supervision of the teacher;
- iii. Become involved in the planning, execution, and evaluation of local health projects;
- iv. Promote the utilization of the mothers club and health services offered at the nuclear school.

b. Cooperatives

- i. Cooperate with local health program in the planting of nutritional crops -- could set an example for the community;
- ii. Health benefits could be given to the members of cooperatives and there could be an insurance system to finance the health services. This would increase utilization of health facilities;

c. Local Comitties and Groups

- i. These groups could be encouraged by the promoter teacher, or intersectorial team to carry out projects that will fulfill the needs of the community, and to coordinate efforts with the team. (See Part II-F Potential of Community Based Organization for Health Work).

4. Volantery Agencies

The following agencies are involved in rural areas, and should be considered in inter-agency coordination: (for details on their

see part II-E Institutional Summary).

- a. Catholic Church
- b. CARITAS
- c. Radio San Rafael
- d. Centro para el Desarrollo Social y Económico
- e. Potrans Cooperative
- f. National Federation of Cooperatives
- g. Alfalit Boliviano
- h. Instituto de Educación para el Desarrollo Rural.

METHODOLOGY FOR RURAL HEALTH SURVEY INCOCHABAMBA VALLEYS

The basic methodology for gathering data will be the following:

1. To interview representatives of institutions in Cochabamba that have health related programs in Valle Alto and Valle Oeste in order; to gather data on personnel, financial resources and facilities.
2. To verify the accuracy of above information through on site visits, and to gather more complete information through interviews, observations, and the use of a survey form.
3. We will be taking our empleada with us, Srta. Jacova Parabolicini, who is bi-lingual (Quechua-Spanish) and dresses in the typical clothing of the area (pollera and manta). She has received training from us and will be of great help in gathering information on curanderos, markets, mothers' clubs, and local attitudes and practices.
4. The furthest and more difficult locations will be visited first in order to avoid transportation problems when the rains start in late November.

Attachments:

1. List of institutions to be visited in the city of Cochabamba.
2. Institutional survey instrument.
3. Estimated itinerary of rural communities to be visited.
4. Community Survey instrument.
5. Area summary form.
6. Monthly and final reports outlines.

Attachment 1: Institutions to be Visited in City
of Cochabamba

Ministry of Health:

1. Unidad Sanitaria (Dr. González)
2. Maternal and Child Health
3. Environmental Sanitation

Ministry of Education:

4. Rural Education
5. Urban Education
6. Normal Schools

Ministry of Agriculture:

7. Extension Service
8. Experimental Stations
9. Community Development Service

National Social Development Council (JNDS):

10. Regional Social Action

Voluntary and Religious Agencies:

11. National Federation of Cooperatives
12. Catholic Bishop's office
13. CARITAS Bolivia
14. Methodist Church (Jaime Bravo)
15. American Institute (Dr. Mario Salazar)
16. COMBASE

Note: Based on above interviews, it is expected that additional institutions will be identified and visited.

Institutional Survey

I. Name of institution: _____
Address: _____
Type of institution: _____
President, Director or Coordinator: _____
Name and position of person(s) interviewed: _____

II. If institution has health related program(s) in Valle Alto or Valle Oeste, locate and describe type and scope:

A. Personnel involved:

1. Number of direct hires:

2. Specialties:

3. Volunteers:

B. Identify facilities:

C. Comment on health resource potential:

D. What is the GOB counter part?

E. Is there any supervision?

Attachment 3: Estimated Itinerary

I. Valle Alto:

A. Tentative field work plan for Cliza and Punata area:

Major towns in area listed in order of site visit; Cliza-Punata-Arani-Villa Rivero-Punata-San Benito-Tolanta-Cliza.

1. Cliza:
2. Ucureña: school
3. Sunchu Pampa: school, north off road
4. Laguna Carmen: 2 schools, north off road
5. Laguna Sulty: school
6. Escuela Dr. R. Ferrufino: school, south off road
7. Punata:
8. Estancia Tambillo: school, off road south
9. Arani:
10. Escuela Puca Orkho: on road south to Villa Rivero
11. Villa Rivero: school
12. Tacachi: school, road south of Villa Rivero
13. Khuchu Muela: school, road south of Villa Rivero
14. Escuela Huifay Khota: school, road south of Villa Rivero
15. Estancia Leon: school, on road to Punata
16. Ecia Santa Ana: school, off road from Punata to San Benito
17. San Antonio: school, road to San Benito
18. San Benito:
19. Paracaya: school, St. Cruz road east of San Benito
20. San Lorenzo: school, west of San Benito

21. Tolata:
22. Huerto Huasa: off road east
23. El Porvenir: school, off road east
24. Perez: school off the road east
25. Santa Lucia: school, road north west off Cliza
26. San Isidro:
27. Capilla Rosario: school, church, etc., north of San Isidro
28. Villa Rosario: school, road north west of Cliza
29. Lequinas: school, road north west of Cliza
30. Toko: south of Cliza
31. Cruz Pata: school, south of Cliza
32. Comunidad Chilijchi: school, south of Cliza
33. Villa León: school, south of Cliza
34. Huasa Rancho: school, south of Cliza
35. Corkos Mamata: south west of Cliza
36. Villa G. Villarroel: school on road to Tarata
37. Calle Mamata: school, on road to Tarata

B. Tentative plan for Tarata area:

1. Tarata:
2. Villa San Jose: south of Tarata, school
3. Milluma: south of Tarata, school
4. Arbieto: school, north of Tarata
5. Villa Jacha Moro: school, north of Arbiato
6. Comunidad Santa Rosa: school, north of Arbiato
7. Villa La Loma: school, north of Arbiato
8. Villa Mercedes: school, north of Arbiato
9. Capilla Santa Rosa: church, road north-west of Tarata to Cochabamba
10. Arpita: school, road to Cochabamba
11. Estancia Villa Carmen: school, road to Cochabamba
12. Estancia Huafia Kkotari: school, road to Cochabamba
13. Santibañez:
Cross-road to Santa Cruz
14. Villa Copacabana: school, on road to Santa Cruz
15. Carcaje Bajo: school, on road to Santa Cruz
16. Khuchu Carcaje: school, on road to Santa Cruz

II. Valle Oeste:

A. Tentative plan for the Quillacollo area:

1. Villa German Busch: road from Cochabamba to Quillacollo
2. La Florida: road from Cochabamba to Quillacollo
3. Colca Pirhua: school, road from Cochabamba to Quillacollo
4. Pojpo Collo: school, north of road from Cochabamba
5. Quillacollo:
6. Vinto: school, west of Quillacollo
7. Montecato: school, north-west of Vinto
8. Cala Trancani: school, north-west of Montecato
9. Comunidad Payacollo: school, south of Quillacollo off road
10. Sipe Sipe:
11. Rosario: on road to Capinota
12. Bella Vista: on road to Capinota
13. Suticollo: on road to Capinota
14. Parotani: school, on road to Capinota

B. Tentative plan for the Capinota area:

1. Capinota:
2. Orcoma: on train route to Oruro
3. Iguerani Nueva: school, on train route to Oruro
4. Sicaya: school, off train route
5. Arque: school, on train route

Community Survey

Date of visit: _____ Name of community: _____

Location: _____ Estimated population _____

I. Transportation.

A. Describe type of roads and where they go: _____

B. What regular transportation is available and where to: _____

C. How far is it to the nearest major city? _____ Name: _____

II. Agriculture and community development.

A. Agriculture.

1. If there is an agriculture experimental station or agriculture extension agents, what potential exists for work in health? _____

2. What is the major emphasis of their program? _____

B. Community development projects.

1. What type of groups exist? _____

2. What projects have been carried out in the last 2 years? _____

3. Is the local group on going _____ or ad-hoc _____

4. What potential exists for going into health projects? _____

III. Community based organizations.

A. Which of the following groups are active?

1. Mothers clubs _____

2. Cooperatives _____

3. Local committ _____

4. Rural out-reach _____

5. Others (specify) _____

B. Describe organizations in terms of funding, participants, emphasis, and potential for going into health work:

C. How is Food for Peace distributed and used? _____

D. Comments:

IV. Health Practitioners (traditional and modern)

	Type	N°	Stability	frequency of visits		language
				by	to	
1.						
2.						
3.						
4.						
5.						
6.						
7.						

B. What herbs are used and for what purpose? _____

C. Comments: _____

V. Markets.

A. When and where are the markets? _____

VI. Environmental Health.

A. Describe condition and source of water supply: _____

B. Describe manner of waste disposal: _____

VII. Attitudes and Practices.

A. If there were a regional health program here, what other communities would be included?

B. Where do the people of this community generally go to for medical attention?

Accident	Ill can't travel	Minor ailments	Major ailments

C. If there were a health center in this region what would be the best location?

VIII. List names and positions of persons interviewed; and indicate who the leaders are (formal, informal, action agent, or innovator) who could be helpful in health:

Interviewees		Leaders	
Name	Position	Name	Comment

IX. Health Resources.

	Type	Sponsor (GROUP %)	Equip- ment	Building	N° Beds	Cap. Beds	Personnel	GOB follow-up supervision
1.								
2.								
3.								
4.								
5.								

Key: Equip

Key: Equipment: A - adequate
 Mi - minor equipment needs
 Ma - major equipment needs

Building: A - adequate
 Mi - Minor repairs needed
 Ma - Major repairs needed
 R - reconstruct

Supervision: R - regular
 S - sporadic
 N - None

Comments:

Retype

3. Conditions: Facilities.

Location: _____

4. Type of School. Fiscal _____ Religious (order) _____

Other (specify): _____

School day: Half day _____ or Full day _____

Information on students and courses in each grade.

Course	Students Enrolled	Regular Students	N ^o Courses	Students Enrolled	Regular Students
7th			7th		
8th			8th		
9th			9th		
10th			10th		
11th			11th		
12th			12th		

Principal _____ Director _____

Location: _____

Type of School: Fiscal _____ Religious (order) _____

Other (specify): _____

School day: Half day _____ or Full day _____

Information on students and courses in each grade.

Course	Students Enrolled	Regular Students	N ^o Courses	Students Enrolled	Regular Students
7th			7th		
8th			8th		
9th			9th		
10th			10th		
11th			11th		
12th			12th		

Attachment 5: Area Summary Form

- I. The following information will be indicated by maps:**
1. Major transportation routes.
 2. Type and location of health facilities.
 3. Health and other personnel distribution.
 4. Locations of existing community development projects.
 5. Locations of active community based organizations.
 6. Locations of major markets and areas of community utilization.
 7. Locations of agriculture experimental station(s) and extension agents.
 8. Common water supply sources.
 9. Locations of schools.
 10. Suggested location(s) for administrative center(s) and area(s) of responsibility.
- II. The following information will be contained in tables and accompanied by respective narration.**
- A. Health facilities.
 - B. Health personnel.
 - C. Health practitioners (traditional and modern).
 - D. Active community based organizations.
 - E. Health related programs.
 - F. Educational facilities.
 - G. Summary of students, courses and teachers.

A. Health facilities area summary.

Type	N°	Sponsor	Equipment			Building				Total N° Beds	Total Cap. Beds
			% A	% MI	% Ma	% A	% MI	% Ma	% R		
1.											
2.											
3.											
4.											
5.											

Key: Equipment: A - Adequate

MI - Minor equipment needs

Ma - Major equipment needs

Building: A - Adequate

MI - Minor repairs needed

Ma - Major repairs needed

R - Reconstruct

D. Active community based organizations

Type	N° in Area	N° Participants
Mothers' Clubs		
Cooperatives		
Local Committees		
Rural Outreach		

E. Health-related Programs

Sponsor	N° of Projects	N° of Personnel	Population Served
Agriculture			
Community Development			
Food for Peace (CARITAS)			

F. Educational Facilities

Sponsor		Fiscal	Religious	Other	Total
Type					
Primaria	1-3				
	1-5				
Intermedio					
Medio					
Total					

G. Summary of students, courses and teachers

	N° Courses	Students Enrolled	Regular Students
1st			
2nd			
3rd			
4th			
5th			
6th			

	N° Courses	Students Enrolled	Regular Students
7th			
8th			
9th			
10th			
11th			
12th			

Total N° of Students _____

Total N° of Teachers:

Part time _____ Full time _____

School day: % half day _____ % Full day _____

III. The following information will be given in narrative form:

- 1. Part II, A, of survey, form related to Agriculture programs.**
- 2. Part II, B, related to community development projects.**
- 3. Potential of community based organization for health work.**
- 4. Food for Peace distribution and use.**
- 5. Herbs used and for what purposes.**
- 6. Environmental health factors: a) condition and source of water supply, b) manner of waste disposal.**
- 7. Health attitudes and practices.**
- 8. Health practitioners (traditional and modern)**
- 9. GOB follow up supervision of health resources.**

Attachment 6: Outlines for Monthly and Final Report

Monthly Reports

- A. Plans for the month in question.
- B. Progress during the month - activities report.
- C. Observations and comments.
- D. Plans for the next month.

Final Report.

- A. Objectives of the survey.
- B. Activity summary.
- C. Summary of results.
 1. Area summaries
 2. Institutional summary.
 3. Medical practice questionnaire.
- D. Conclusions.
 1. Status of rural health services.
 2. Status of health-related programs. *Summary*
 3. Status of community involvement in health. - *Potential of com*
 4. Status of voluntary agencies. - *Summary*
 5. Status of indigenous and private practitioners. *Curanderos*
- E. Recommendations.
 1. Rural health delivery systems.
 2. Health-related programs.
 3. Communities involvement.
 4. Voluntary agencies.
 5. Indigenous and private practitioners.

MONTHLY REPORT

- I. Plans for the month of October.
- A. Visit the institutions in the city of Cochabamba that may have programs in the Valle Alto or Valle Oeste.
 - B. Distribution of physicians surveys and follow-up.
 - C. Begin visits to the Valle Alto starting in the Arani-Punata areas.
- II. Activities Report
- A. The institutions visited are listed below and the names of the people who were interviewed.
 1. Methodist Church Sr. Jaime Bravo
 2. COMBASE Sr. Wilfran Hinojosa
 3. CARITAS R.P. Mario Santiago
 4. Catholic Bishop Monseñor Armando Gutiérrez
 5. American Institute Sr. Mario Selazar
Sra. Christine de Marcos
 6. National Federation of Cooperatives Sr. Marco Antonio Téllez
 7. Desarrollo Social y Económico - DESEC Sr. Juan Demeure
 8. Servicio Popular de Salud Sr. Antonio Cervello
 9. Acción Rural Agrícola de Desarrollo Organizado - ARADO Sr. Querubin Gutierrez
 10. Ministry of Agriculture Sr. Lucio Antezano
Sr. Jorge Meado
Sr. Orlando Soriano
 11. Ministry of Rural Education - Directors and Supervisors

Sr. León Hochs	Sr. Lucio García
Sra. Clotilde Rojas	Sr. Francisco La Fuente
Sr. Bené Torrico	Sr. Aníbal Osinaga
Sr. Gustavo García	Sr. Angulo
Sr. Luis López	Sr. Espinosa
Sr. Julio Obellero	Sr. Velasco

- | | | |
|-----|------------------------------------|------------------------|
| | Sr. Hugo Montañó | Sr. Paravicino Ruiz |
| | Sr. Sinfaroso Sejas | Sr. Caballero |
| | Sr. Celso Morales | Sr. Quiñones |
| 12. | <u>Ministry of Urban Education</u> | Sra. M. Elena de López |
| 13. | <u>Desarrollo de Comunidades</u> | Sr. Emilio Cano |
| | | Sr. Roberto Ruiz |
| 14. | <u>Ministry of Health</u> | Dr. Gonzáles |
| 15. | <u>Maternal & Infant Care</u> | Dr. Montecinos |
| 16. | <u>Environmental Health</u> | Sr. Eduardo Gamboa |
| 17. | <u>School of Medicine</u> | Dr. Stambuck |
| | | Dr. José Ruiz |
| | | Dr. Sabath |
| | | Dr. Mariscal |
| | | Dr. Mario Rivera |
| | | Dr. Luis García, Dean |

B. A total of 53 doctors participated in the physicians survey, among them the following professors:

- | | |
|-----------------------------|---------------------------|
| 1. Dr. Augusto Morales Asúa | 5. Dra. Silvia de Salinas |
| 2. Dr. Guido Trigo | 6. Dr. Juan Salazar |
| 3. Dr. Gonzalo Salinas | 7. Dr. Jaime Sabath |
| 4. Dr. Walter Salinas | 8. Dr. Carlos Quiroga |

C. In the Arani, Punata, and Cliza areas the following communities were visited:

- | | |
|--------------------|-------------------|
| 1. Arani | 14. Paracaya |
| 2. Punata | 15. Cliza |
| 3. Villa Rivero | 16. Tolata |
| 4. Canscho Rancho | 17. Valle Hermoso |
| 5. Salinas | 18. San Isidro |
| 6. Escóber | 19. Flores Rancho |
| 7. San Benito | 20. Toko |
| 8. Collpa Bajo | 21. Ucureña |
| 9. Collpaclaco | 22. San Lorenzo |
| 10. Chilcar Grande | 23. Chijijchi |
| 11. Chovpi Rancho | 24. Ayoma |
| 12. Puka Orkho | 25. Chullpas. |
| 13. Tacschi | |

III. Observations and Comments

A. Institutional Survey

All of the institutions we visited were very cooperative and many people demonstrated willingness to collaborate with health related programs and projects. The only organization that was not cooperative on our first visit was CARITAS. However, once we presented a letter from the Catholic Relief Fund in La Paz, we were able to obtain the information we needed. At the Ministry of Rural Education we were able to interview many directors and supervisors of rural schools. Since the schools had closed recently, all these people had to come to the office to turn in their reports. Through various interviews we were able to map out the "nucleos" and their dependencies, plus gain much information about the communities under their jurisdiction.

B. Physicians Surveys

Our efforts in the distribution and follow-up of the physicians surveys were facilitated by the collaboration of Dr. Stambuck and Dr. Sebath. If it had not been that the doctors themselves had inspired their colleagues to fill out the forms, no amount of effort on our part could have motivated so many doctors to return the forms.

C. Community Survey

1. Itinerary

Due to the density of population in the Valle Alto, we were able to visit an average of 4 communities a day. One cannot walk more than 2 Km. without passing a town or small village. Our estimated itinerary has changed somewhat since we have started working in the field. It turned out that many communities were not on the map but were of substantial size that we felt they were worthwhile visiting. Often the transportation from place to place is such that some towns are more accessible than others. A couple of times we were able to go with the extension agent in his jeep, and visit some of the communities where he was organizing cooperatives. Sr. German Lazarte in Cliza was most helpful, introducing us to the leaders and explaining to them the nature of our work.

2. Interviews

Originally we had hoped to interview five people in each community. Only in the larger towns has this been

possible. In most of the small villages there is no priest, nurse, teacher (since the schools have closed), or other reliable source of information except the local authorities. Each town should have a "dirigente" and a "corregidor". What we have been doing is trying to meet with at least one authority and also with a resident of the community. In some cases the authorities are out of town, and in that case we interview two residents. We have found that with at least two interviews we can obtain fairly accurate and complete information about a small community. For the larger villages (over 300 houses) we try to interview at least 4 people, and in the province capitals between 7 and 10.

3. Curanderos

In many communities the people deny the existence of curanderos. When they admit that there is a curandero in the area, they are very vague, saying that he lives far away in the "campo" and only comes when called. According to the extension agent in Cliza, the people tend to be very protective of their curanderos and until they trust a person don't readily give out information. On the other hand, doctors, nurses, and professional people claim that there are no curanderos because they have all been driven out. For the most part the doctors have a very negative attitude towards the curanderos.

From the information that we have been able to gather about curanderos, it seems that the people always visit the curandero first. If the cure is not successful they may visit a hospital or puesto sanitario. The curandero charges less and has the complete trust of the people. In general there is not much trust in doctors, and the medicines are always more expensive than the home remedies.

In the few places where we did find the curandero, Jacova (our empleada) was very helpful in getting the information we needed. One partera spoke only quechua and would not talk to us until Jacova assured her that we were not going to use the information for anything harmful. The people are very suspicious sometimes, especially old people and women, and it helps to have someone with us who can speak to them in their own language.

4. Methodology

As we started to work in the Valle Alto, we found that there was regular transportation to Areani, Punata, and Cliza. Therefore, we decided to stay in Cochabamba and travel each day to the campo. Eloy has been going by himself to Areani and Punata areas, and Lynn and Jacova went together to Cliza and the surrounding communities. This way we were able

to cover a larger area in less time. This system of work will probably not be feasible in parts of the Valle Oeste because distances are greater and transportation is not as regular.

IV. Plans for the month of November

- A. We plan to meet with the agricultural extension agents responsible for Tarata, Quillacollo and Capinota to investigate the possibility of visiting some communities with them when we visit those areas.
- B. We plan to visit 25 communities in the provinces of Arze, Capinota, and Quillacollo.
- C. Visit mothers clubs in Valle Oeste with supervisor of CAREERS, Sr. Gonzales.

Report submitted by:

Eloy and Iyna Anello, October 31, 1974.

MONTHLY REPORT

I. Plans for the month of November

- A. Meet with the agriculture extension agents who are working in the Valle Alto and Valle Oeste
- B. Visit 25 communities in the provinces of Arze, Capinota, and Quillacollo.
- C. Visit mothers clubs in the Valle Oeste with the supervisor of Caritas, Mr. González.

II. Activities Report

- A. We had planned to meet with all the extension agents during a meeting they were having in Cochabamba, however, this was not possible because the meeting was postponed. We decided to meet the agents in their respective areas and coordinate activities from there. We made three trips with the agent in Tarata, Sr. Torrejón, and consulted with the agents in Quillacollo and Capinota.
- B. In the provinces of Arze, Capinota, and Quillacollo the following communities were visited:

Capinota

1. Santibañez
2. Arce Rancho
3. Irpa Irpa
4. Dapinota
5. Charanoko

Tarata

6. Tistaco
7. Tarata
8. Villa Carmen
9. Arpita
10. Mananaca
11. Pampa Manata
12. Arbieta
13. Jacha Moko
14. La Loma
15. Villa Mercedes
16. Santa Rosa

Quillacollo

17. Vinto
18. Sauce Rancho
19. Mallico Rancho
20. Chiltu Pampa
21. Parotani
22. Sipe Sipe
23. Payucollo
24. Anocaire
25. El Paso
26. Iruiricollo
27. Itapaya
28. Fojpocollo
29. Quillacollo
30. Saticollo
31. Buen Retiro

Three communities were visited on the road between Cliza and Punata:

1. Laguna Halty
2. Lobo Rancho
3. Roman Calle

- C. Mothers Clubs: After the letter arrived from the Catholic Relief Fund Caritas was very helpful in giving us the information we needed. Mr. González took us to three communities where the mothers clubs are active: Mallico Rancho, Payacollo, and Sipe Sipe. In each community he arranged for us to meet a few members of the mothers club, and he explained in detail the functioning of the clubs. He was also helpful in arranging interviews with other community leaders so that we could complete our community survey. In Sipe Sipe he and Jacova interviewed a curandero from whom we obtained some interesting and alarming information about his way of curing.

III. Observations and Comments

A. Mothers Clubs

Through our interviews with Caritas we found that the only mothers clubs that function are under the guidance and supervision of Caritas. Without the food it is very difficult to organize and keep active a group of mothers. The food serves as an incentive for the mothers to attend the meetings regularly. The sño de provincia doctor in Tarata once helped with the mothers club there, but once the food was suspended (he didn't know why) the mothers stopped coming.

F. Curanderos

We decided to revise our tactics on approaching curanderos in an effort to obtain more information about their practices. Arriving at a village, we would send Jacova out in search of a curandero. She went by herself and said that she needed to see one in order to find a cure for a sick friend. In this manner we were able to identify the local traditional practitioners, and usually Jacova could visit one or two of them. We have recorded the interviews, and plan to include the most interesting ones in our final report.

C. Methodology

We have continued to follow the same basic system we used in the Valle Alto. The three of us usually traveled together to one place, and from there separated (Eloy by himself and Lynn and Jacova together) in order to cover more communities.

IV. Plans for the month of December

- A. Visit Arque and possibly one or two surrounding communities
- B. Visit the Ministries of Urban and Rural Education in order to obtain more complete information on schools, students and teachers.

- C. Visit "Acción Cívica de las Fuerzas Armadas", an organization that has some programs in the Valle Oeste mostly giving materials to rural communities for the construction of schools, postas sanitarias, and agua potable pumps.
- D. Visit GEOBOL, an institution that has done a study on the water problem in the Valle Alto.
- E. Write rough draft of final report and go to La Paz around the 15th to type the finished copy.

MONTHLY REPORT

I. Plans for the month of December.

- A. Visit Arque and possible one or two surrounding communities.
- B. Visit the Ministries of Urban and Rural Education in order to obtain more complete information on schools, students and teachers.
- C. Visit "Acción Cívica de las Fuerzas Armadas", an organization that has programs in the Valle Oeste and Valle Alto.
- D. Visit GBOBOL, an institution that has done on study on the water problem in the Valle Alto.
- E. Write rough draft of final report and go to La Paz around 15th to type the finished copy.

II. Activity Report

- A. Arque and Iguarani were visited
- B. The following institutions were visited:
 1. GBOBOL - Servicio Geológico de Bolivia y Naciones Unidas
 - a. Sr. Carlos Velasco
 2. Fotrana Cooperative
 - a. Padre Eraldo
 3. Radio San Rafael
 - a. Sr. Mario Godoy
 - b. Srta. Marina Gallardo
 4. ALPALIT Boliviano
 - a. E. Arturo Villarreal
 5. Instituto de Educación para el Desarrollo Rural. INEDER
 - a. Guido Espinosa
 6. National Federation of Cooperatives
 - a. Sr. Victor Hugo Arrays

7. Acción Cívica de las Fuerzas Armadas

- a. Coronel Juan Magne Murriel
- b. Tobias Terrazas Montaña.

8. Centro para el Desarrollo Social y Económico

- a. Sr. Rodolfo Costas

9. Corporación de Desarrollo de Cochabamba CORDECO

10. Comité Interinstitucional de Coordinación para el Desarrollo de Cooperativismo en Cochabamba SICORDECOOP

- a. Sr. Mataniel Prado Barrientos

11. Ministerio de Educación Urbana

- a. Sr. Cardona

12. Ministerio de Educación Rural

C. The rough draft of the final report was written and the final copy typed.

III. Observations and Comments.

In an effort to obtain more information on cooperatives in the Valle Alto and the Valle Oeste, we happened to walk in to a meeting of SICORDECOOP, a committee that coordinates the activities of 14 agencies in Cochabamba. The committee gave us additional information about institutions that have programs in rural areas. In this manner we were able to identify additional institutions and interview them. We also went back to some institutions we had already interviewed to get additional information that was not obtained during the first interview.