

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
MINISTERIO DE EDUCACION Y CULTO
ADMINISTRACION NACIONAL DE TELECOMUNICACIONES
REPUBLICA DEL PARAGUAY

**STUDY ON
THE ESTABLISHMENT OF EDUCATIONAL
TELEVISION BROADCASTING NETWORK
IN THE REPUBLIC OF PARAGUAY**

MAIN REPORT

SEPTEMBER 1993

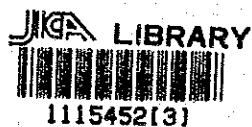
**NHK Integrated Technology Inc.
in association with
Yachiyo Engineering Co., Ltd.**

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Currency Exchange Rate used throughout the Study
US\$1 = 1,700 Paraguayan Guarani = 120 Japanese Yen
as of February, 1993

PREFACE

In response to a request from the Government of the Republic of Paraguay, the Government of Japan decided to conduct a master plan and feasibility study on the Establishment of Educational Television Broadcasting Network in the Republic of Paraguay and entrusted the study to the Japan International Cooperation Agency (JICA).

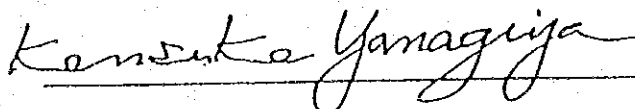
JICA sent to Paraguay a study team headed by Mr. Toshinori Miura, Chief Engineer, International Department, NHK Integrated Technology Inc., and composed of members from NHK Integrated Technology Inc. and Yachiyo Engineering Co., Ltd., three times between November 1992 and July 1993.

The team held discussions with the officials concerned of the Government of Paraguay, and conducted field surveys at the study area. After the team returned to Japan, further studies were made and the preset report was prepared.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the Republic of Paraguay for their close cooperation extended to the team.

September 1993



KENSUKE YANAGIYA
President

Japan International Cooperation Agency

September 1993

Mr. Kensuke Yanagiya
President
Japan International Cooperation Agency
Tokyo, Japan

Dear Mr. Yanagiya,

Letter of Transmittal

We are pleased to submit to you the study report on the Establishment of Educational Television Broadcasting Network in the Republic of Paraguay. The report contains the advice and suggestions of the authorities concerned of the Government of Japan and your Agency as well as the formulation of the above mentioned project. Also included are comments made by the Ministry of Education and Culture and the Ministry of Public Works and Communications (ANTELCO) of the Government of Paraguay during technical discussions on the draft report which were held in Asunción.

This report presents a master plan of development of educational television broadcasting till the year 2010 as the target year and a feasibility study for the priority project covering the first eight years.

In view of the urgency of development of educational television broadcasting in Paraguay and of the need for socio-economic development of Paraguay as a whole, we recommend that the Government of Paraguay should implement the priority project as early as possible.

We wish to take this opportunity to express our sincere gratitude to your Agency, the Ministry of Foreign Affairs and the Ministry of Posts and telecommunications. We also wish to express our deep gratitude to the Ministry of Education and Culture as well as ANTELCO, and other authorities concerned of the Government of Paraguay for the close cooperation and assistance extended to us during our investigations and study.

Very truly yours,

三浦 俊典

Toshinori Miura
Team Leader
Study on the Establishment of
Educational Television Broadcasting Network
in the Republic of Paraguay

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ABBREVIATION

AM	: Amplitude Modulation
ANDE	: The Public Electric Power Company
ANTELCO	: Administración Nacional de Telecomunicaciones
AVR	: Automatic Voltage Regulator
CATV	: Cable Television
CCD	: Charge Coupled Device
CCITT	: Comité Consultatif International Telegraphique et Telephonique
CREs	: Regional Education Centers
DINAC	: National Public Aviation Bureau
EDP	: Educational Development Program
EFP	: Electronic Field Production
ERP	: Effective Radiated Power
ETV	: Educational Television
F.C.C.	: Federal Communications Commission
FM	: Frequency Modulation
GDP	: The Gross Domestic Products
IC	: Integrated Circuit
IFDs	: Teacher Training Institutes
IPAC	: Instituto Profesional de Artes y Ciencias de la Comunicación
IPT	: The Institute of Paraguayan Telecommunication
ISE	: Higher Institute for Education
MCR	: Master Control Room
MEC	: Ministerio de Educación y Culto
MERCOSUR	: Mercado Comun del Sur; Southern America Common Market
MOPC	: The Ministry of Public Works and Communications
OB VAN	: Outdoor Broadcasting Van
OIT	: Organización Internacional de Trabajo
OJT	: On the Job Training
OPS	: The Organizations Panamericana de Salud
OREALC	: La Oficina Regional para America y Caribe
PAL	: Phase Alternation Line
PD	: Program Director
RPC	: Teledifusora Paraguaya S.A.
SNT	: Sistema Nacional de Televisión
STL	: Studio to Transmitter Link
SW	: Switcher
TD	: Technical Directors
UHF	: Ultra High Frequency
UNA	: The National University of Asunción

ABBREVIATION

VCR : Video Cassette Recorder
VE : Video Engineer
VHF : Very High Frequency
VHS : Video Home System
VTR : Video Tape Recorder

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INTRODUCTION

INTRODUCTION

1.1 Background of the Study

The Republic of Paraguay became independent in 1811 after long years under the rule of Spain. Since then, having had 27 years' national isolation policy, the country's modernization has been hindered due to lack of cultural exchange with foreign countries, although its individual culture had been developed.

The Government of Paraguay, therefore, has been trying to overcome the cultural gap by putting emphasis on education for the younger generation.

As a part of this effort, the government is now broadcasting an educational television program produced by the Ministry of Education with the cooperation of a commercial television station. It has become very difficult to get the air-time a week.

The Paraguayan government plans to establish a public educational television broadcasting network which serves educational programs regularly in order to strengthen its youth education, adult education, and re-training of teachers. The Paraguayan government requested the Japanese government in October, 1990, to carry out a study of the Master Plan of this project and give them specific advice for the implementation of such a network.

In response to the request, the Government of Japan dispatched the preliminary study team of Japan International Cooperation Agency (hereinafter referred to as "JICA") to Paraguay in April 1992.

The team had a series of discussions with Paraguayan Government authorities and the both parties agreed on the "Scope of Work" and "Minutes of Meeting" in Asuncion on April 14, 1992.

1.2 Purpose of the Study

The purpose of this study is to draw up a Master Plan for the nationwide establishment of an educational television broadcasting network and to carry out a Feasibility Study of the priority project. Another purpose of the study is to transfer technology to the Paraguayan counterparts during the execution of the study.

1.3 Area Covered by the Study, Scope and Content of the Study

(1) Area Covered by the Study

The entire territory of the Republic of Paraguay.

(2) Scope of the Study

The scope of the study is based on the Scope of Work(S/W) and Minutes of the Meeting (M/M) agreed to on April 14, 1992. It consists of two phases: the first phase, the study of the Master Plan, and the second phase the Feasibility Study of the priority project.

(3) Content of the Study

1) Master Plan

The Master Plan was formulated on the following plans which are described in PART II of the main report.

- ① Educational Broadcasting Utilization and Development Plan
- ② Organization and Management Plans
- ③ Program Planning
- ④ Broadcasting Network Plan
- ⑤ Facilities Plans
- ⑥ Program Transmission Plan
- ⑦ Operation and Maintenance Plans
- ⑧ Estimates of Project Costs
- ⑨ Project Evaluation
- ⑩ Implementation Plan

2) Priority Project

The feasibility study on the Priority Project was conducted on the following items, and described in PART III of the main Report.

- ① The Priority Project
- ② Program Development

- ③ Facilities Arrangement Plan
- ④ Organization and Management Plan
- ⑤ Operation and Maintenance Plans
- ⑥ Implementation Plan of the Priority Project
- ⑦ Project Evaluation

1.4 Configuration of the Report

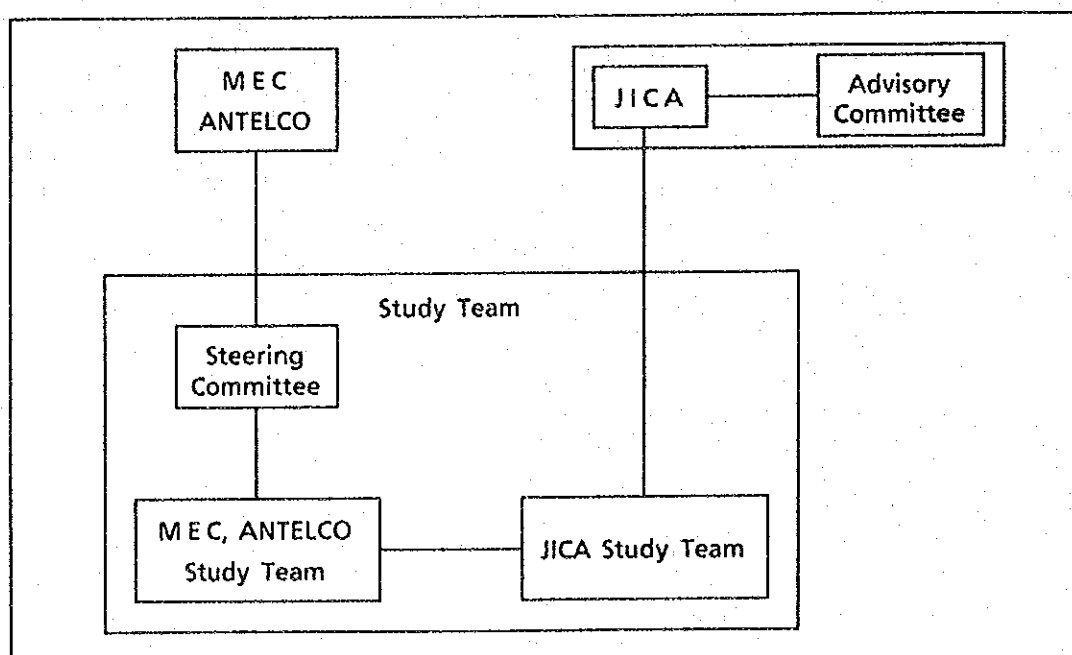
This report consists of the following parts:

- Main Report
- Summary
- Supporting Report
- Data File

1.5 Study Organization

The JICA Study Team is composed of eleven specialists. A separate JICA Advisory Committee was organized to monitor and help the Study Team carry out its work efficiently. The Paraguayan side organized a counterpart team composed of staff from the Ministry of Education and Culture (MEC) and National Administration of Telecommunications (ANTELCO) to cooperate with the JICA Study Team. A Steering Committee composed of representatives from related fields of MEC and ANTELCO was organized to ensure the smooth execution of the study as shown on Figure 1.5.1.

Figure 1.5.1 Study Organization



1.6 Outlines of the Study

The Study in Paraguay was conducted total three times as follows:

(1) First Study in Paraguay (November 1992 - January 1993)

The study in Paraguay for the first phase was conducted for a period of 86 days from November 4, 1992 to January 28, 1993 by the JICA Study Team consisting of total 11 (eleven) members. Two members of the Advisory Committee together with a JICA coordinator also joined the Study Team from November 4 to November 11, 1993.

The JICA Study Team conducted study by discussions with members of the Steering Committee and counterparts of MEC, ANTELCO. The work was carried out through such works as:

- Submission and explanation of the Inception Report to the Paraguayan Government
- Gathering and classifying of the existing materials and data
- Making actual visits to the sites to have a grasp of the present status of education, the present TV broadcasting services and survey conditions to build TV broadcasting facilities
- Preparation of the Progress Report and its submission to the Paraguayan Government

After returning to Japan, the JICA Study Team carried out analysis of the outcome of the study, formation of the Draft Master Plan and identification of the priority project, and has compiled the Interim Report.

(2) Second Study in Paraguay (April 1993 - May 1993)

The study in Paraguay for the second phase was conducted for a period of 30 days from April 20 to May 19, 1993 by the JICA study team consisting of 9 (nine) members. Two members of the Advisory Committee together with a JICA coordinator were also joined the Study Team from April 24 to May 1, 1993.

At the beginning of the second study period, the JICA Study Team presented the Interim Report and explained its contents to the members of the

Steering Committee and the counterparts of MEC and ANTELCO, in the presence of the Advisory Committee. After a series of discussions, the Paraguayan side agreed in general to the contents of the Interim Report and further details including the development schedule and the organization were discussed.

After returning to Japan, the JICA Study Team carried out further analysis of the outcome of the study and compiled the Draft Final Report.

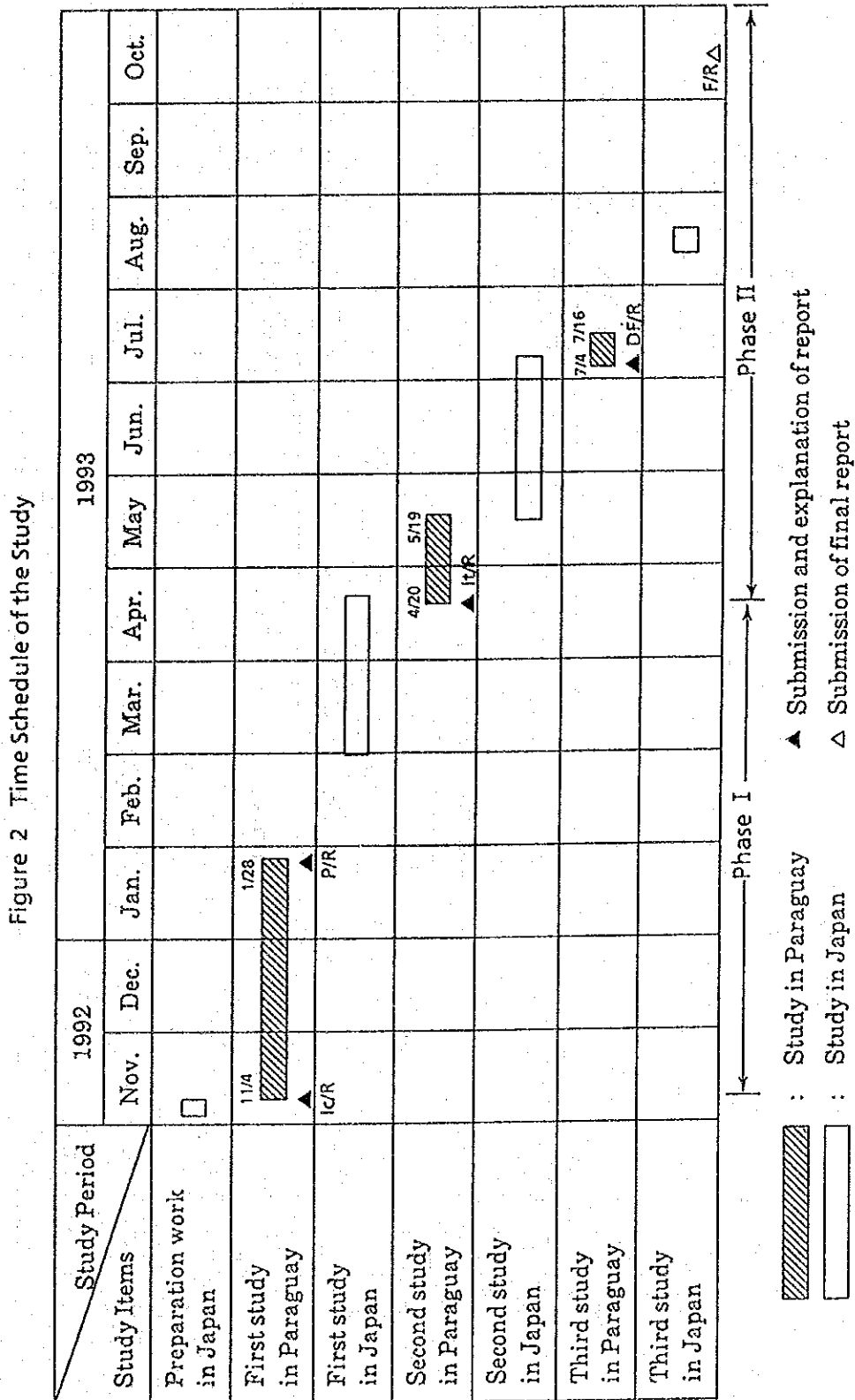
(3) Third Study in Paraguay (July 1993)
(Explanation of the Draft Final Report)

The explanation of the Draft Final Report was conducted for a period of 13 days from July 4 to July 16, 1993 by the JICA Study Team consisting of 4 members. Two members of the Advisory Committee together with a JICA coordinator were also joined the explanation for the same period.

The study team made the explanations to members of the Steering Committee and the counterparts of MEC and ANTELCO, and, as a result of discussions, the Draft Final Report was accepted in principle and agreed upon by both parties to prepare the Final Report in line with the basic concept of the discussions.

1.7 Study Schedule

The total study schedule for the first phase and the second phase is shown in Figure 2.



1.8 Members of Study Organization

(1) JICA

Name	Assignment	Affiliated to
1. Mr. Toshinori MIURA	Team Leader/ Operation and Maintenance planning	NHK Integrated Technology Inc.
2. Mr. Junkichi YAMAZAKI	Utilization of educational broadcasting and its development planning	Yachiyo Engineering Co., Ltd.
3. Mr. Isamu KOIKE	Organization and management planning	Yachiyo Engineering Co., Ltd.
4. Mr. Isamu SUZUKI	Broadcasting programming planning	NHK Integrated Technology Inc.
5. Mr. Hideo HIROBA	Broadcasting network planning	NHK Integrated Technology Inc.
6. Mr. Sumio MATSUOKA	Studio facilities planning	NHK Integrated Technology Inc.
7. Mr. Takashi MIYAGI	Transmitting facilities planning	NHK Integrated Technology Inc.
8. Mr. Kiyoshi UEDA	Building facilities planning	NHK Integrated Technology Inc.
9. Mr. Ikuo WATANABE	Program transmission planning	NHK Integrated Technology Inc.
10. Mr. Naoki HARA	Social, Economic and financial evaluation	Yachiyo Engineering Co., Ltd.
11. Mr. Kazuhisa NARITA	Coordinator	NHK Integrated Technology Inc.

2) Advisory Committee

Name	Duty-in-charge	Affiliated to
Mr. Akira NASU	Chairman	Special Advisor For International Cooperation Ministry of Post & Telecommunications
Mr. Masakatsu TSUCHIYA	Member	Chief Engineer Engineering Division Broadcasting Bureau Ministry of Post & Telecommunications
Mr. Masao YOSHIDA	Member	Development Specialist Institute for International Cooperation Japan International Cooperation Agency

3) JICA Coordinator

Name	Duty-in-charge	Affiliated to
Mr. Haruhiko YOSHIDA	Coordinator	Staff, Second Development Study Division Social Development Study Department JICA
Mr. Yoshihiro NISHIMURA	Coordinator	Staff, Second Development Study Division Social Development Study Department JICA

(2) Paraguayan Government

1) Steering Committee

a. Ministerio de Educación y Culto (MEC)

Dra. Martina Cardenas	Sub secretaria de Estado de Educación
Dra. Aidee Carmagnola de Aquino	Sub Secretaria Estado de Culto
Lic. Jorge Ernesto Garbett	Directora de Teleducación
Lic. Lina Mato de Ferreira	Directora de Planeamiento Educativo
Dr. Pedro Vazquez	Directora de Administración de MEC
Lic. Celsa Bariro de Soto	Directora de Enseñanza Primaria
Lic. Nidia Pellegrini de Castillo	Directora de Alfabetización y Educación de Adultos
Lic. Cesar Torres Antunes	Director de Centros Regionales de Educación
Lic. Aura E. Vallejos Cataldi	Directora de Instituto Superior Educación
Prof. Daisy Lopez de Valinotti	Coordinadora Proyecto

b. Administración Nacional de Telecomunicaciones (ANTELCO)

Ing. Eduardo Kishi	President del Consejo
Ing. Carlos Gines	Director de Explotación
Ing. Andrés I. F. Arrúa R.	Jefe Dpto. Gestion de Trafico
Ing. Mirian Teresita Paracios	Coordinador Proyecto
Sr. Jorge Victor Lombardo	Coordinador Proyecto

2) Counterparts

Name	Assignment	Affiliated to
Ing. Eduardo Kishi	Utilization of educational broadcasting and its development planning	(ANTELCO) Presidente de Consejo
Ing. Edgardo A. Pereira	Operation and Maintenance planning	(ANTELCO) Dir. de Planificación
Lic. Jorge Ernesto Carbet	Utilization of educational broadcasting and its development planning	(MEC) Director de TV. Educ.
Ing. Jorge Lombardo	Organization and management planning	(ANTELCO) Coordinación
Ing. Raur Patino Siiva	Organization and management planning	(ANTELCO) Coordinación
Sra. Daisy de Valinotti	Organization and management planning	(MEC) Coordinador de Producción
Sra. Marif Evgenia Miranda	Broadcasting programming planning	(MEC) Jefe de Programación
Sr. Edgar Urbieto	Broadcasting programming planning	(MEC) Asistente de Producción
Ing. Miguel Ruidiaz	Broadcasting network planning	(ANTELCO) Dir. de Proyec. y Coordinación
Ing. Mario Espinora	Broadcasting network planning	(ANTELCO) Dir. de Normas y Tecnología
Sr. Satoru Manabe Suenaga	Studio facilities planning	(MEC) Jefe Técnico
Ing. Dolly Alfonso	Transmitting facilities planning	(ANTELCO) Gerencia Transmisión
Ing. Amado Benitez	Transmitting facilities planning	(ANTELCO) Dpt. de Transmisión
Arq. Laureano Alonso	Building facilities planning	(MEC) Jefe de Dpto. Construcciones Escolares
Ing. Raur Pereira	Program transmission planning	(ANTELCO) Representante Operacional
Sr. Jorge Pineda	Social, Economic and financial evaluation	(MEC) Administración

PART I

CURRENT CIRCUMSTANCES OF STUDY AREA

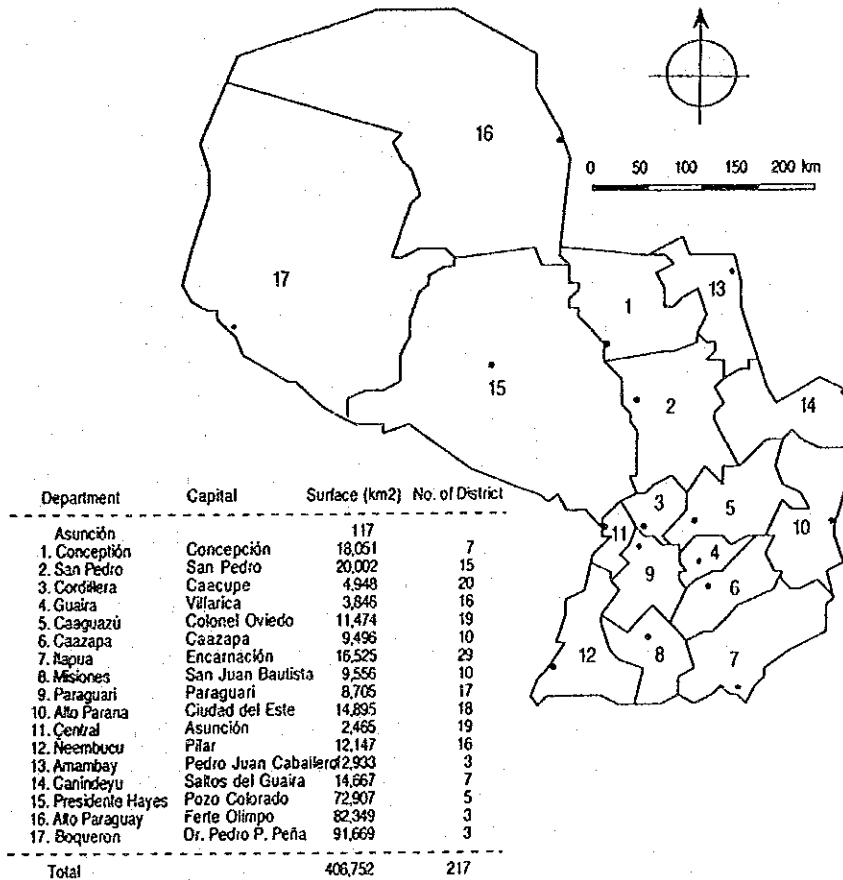
CHAPTER 1 SOCIO-ECONOMIC CONDITIONS

1.1 Geographical Administrative Division

Paraguay is situated between west longitude 54°15'-62°38' and southern latitude 19°18'-27°36', and is bordered by Brazil, Argentina and Bolivia. The total land area is 406,752 km². The River Paraguay traverses the country from north to south and geographically divides Paraguay into two parts, the eastern part (159,827 km²) and the western part (246,925 km²).

The country is divided administratively into 17 departments (Departments) and Asunción. The eastern part is comprised of 14 departments, while the western part has three. Figure 1.1.1 below shows the Administrative Divisions of Paraguay.

Figure 1.1.1 Administrative Division of Paraguay



1.2 Population and Households

1.2.1 Population Growth

The population census has been conducted once every 10 years since 1962. In accordance with the results of the latest census of 1992, the total population of Paraguay is 4,123,550. The average annual population growth rate was 2.6% during 1962-1972, 2.5% during 1972-1982, and 3.1% during 1982-1992. Table 1.2.1.1 below shows the population by department in 1992.

Table 1.2.1.1 Population by Department

Department	Area (km ²)	1972 Population	1982 Population	'72-'82 Ann.%	1992 Population	1992 Pop./km ²	'82-'89 Ann.%
Asunción		388,958	454,881	1.6%	502,426		1.0%
		0	0		0		
	117	388,958	454,881	1.6%	502,426	4,294.2	1.0%
1. Concepción		31,376	34,700	1.0%	56,397		5.0%
		75,764	99,277	2.6%	110,549		1.1%
	18,051	108,130	133,977	2.2%	166,946	9.2	2.2%
2. San Pedro		21,000	29,182	3.3%	36,132		2.2%
		117,018	161,820	3.3%	240,978		4.1%
	20,002	138,018	191,002	3.3%	277,110	13.9	3.8%
3. Cordillera		36,913	48,588	2.8%	61,446		2.4%
		157,305	145,423	-0.8%	144,651		-0.1%
	4,948	194,218	194,011	0.0%	206,097	41.7	0.6%
4. Guaira		36,352	40,326	1.0%	47,172		1.6%
		88,447	103,184	1.6%	115,072		1.1%
	3,846	124,799	143,510	1.4%	162,244	42.2	1.2%
5. Caaguazú		33,215	57,704	5.7%	105,574		6.2%
		177,643	241,733	3.1%	277,745		1.4%
	11,474	210,858	299,437	3.6%	383,319	33.4	2.5%
6. Caazapa		14,888	14,002	-0.6%	16,791		1.8%
		88,251	95,450	0.8%	111,759		1.6%
	9,496	103,139	109,452	0.6%	128,550	13.5	1.6%
7. Itapúa		44,658	61,788	3.3%	109,707		5.9%
		156,753	200,892	2.5%	266,041		2.8%
	16,525	201,411	262,680	2.7%	375,748	22.7	3.6%
8. Misiones		22,084	28,346	2.5%	44,364		4.6%
		47,162	49,129	0.4%	44,260		-1.0%
	9,556	69,246	77,475	1.1%	88,624	9.3	1.4%
9. Paraguari		32,498	41,279	2.4%	44,493		0.8%
		179,479	163,120	-1.0%	158,519		-0.3%
	8,705	211,977	204,399	-0.4%	203,012	23.3	-0.1%
10. Alto Parana		16,199	83,149	17.8%	231,042		10.8%
		72,408	116,495	4.9%	172,816		4.0%
	14,895	88,607	199,644	8.5%	403,858	27.1	7.3%
11. Central		136,824	298,040	8.1%	688,614		8.7%
		173,566	199,348	1.4%	175,926		-1.2%
	2,465	310,390	497,388	4.8%	864,540	350.7	5.7%
12. Neenbucu		22,235	22,957	0.3%	31,407		3.2%
		50,863	47,381	-0.7%	38,477		-2.1%
	12,147	73,098	70,338	-0.4%	69,884	5.8	-0.1%
13. Amambay		25,079	43,992	5.8%	62,873		3.6%
		40,032	24,403	-4.8%	34,285		3.5%
	12,933	65,111	68,395	0.5%	97,158	7.5	3.6%
14. Canideyu			13,064		17,446		2.9%
			53,345		79,380		4.1%
	14,667		66,409		96,826	6.6	3.8%
15. Presidente Hayes		7,676	11,654	4.3%	22,088		6.6%
		30,763	21,367	-3.6%	37,012		5.6%
	72,907	38,439	33,021	-1.5%	59,100	0.8	6.0%
16. Alto Paraguay			5,168		4,360		-1.7%
			3,566		7,014		7.0%
	14,982		8,734		11,374	0.2	2.7%
17. Chaco			0		0		
			287		442		4.4%
	36,367		287		442	0.0	4.4%
18. Nueva Asuncion			0		0		
			234		1,426		19.8%
	44,961		234		1,426	0.0	19.8%
19. Boqueron		9,199	6,525	-3.4%	1,685		-12.7%
		16,991	8,031	-7.2%	23,181		11.2%
	46,708	26,190	14,556	-5.7%	24,866	0.5	5.5%
Olimpo		3,191	0		0		
		2,175	0		0		
		5,366	0		0		
Total		882,345	1,295,345	3.0%	2,084,017		4.9%
		1,475,610	1,734,485	1.6%	2,039,533		1.6%
	406,752	2,357,955	3,029,830	2.5%	4,123,550	10.1	3.1%

* Areas in 1992

Source: Censo Nacional de Poblacion y Viviendas (1972, 1982, 1992-Cifras Provisorias).

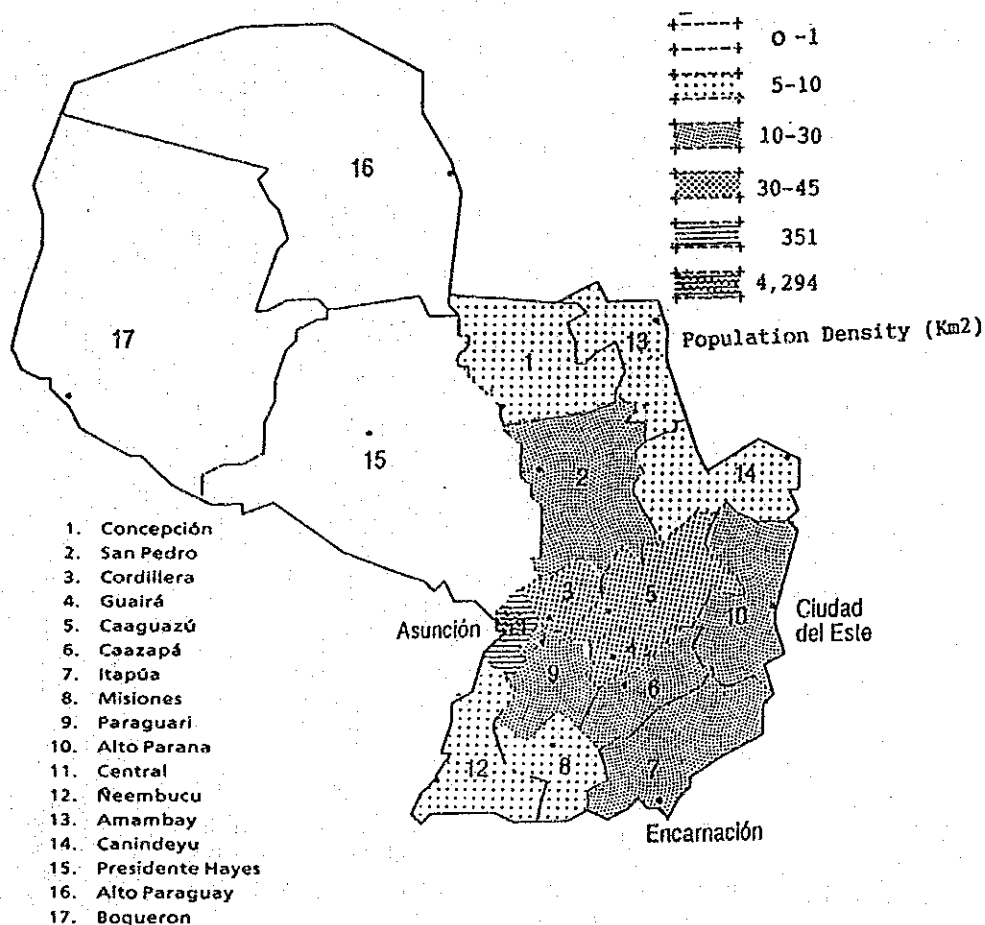
Secretaria Técnica de Planificación

1.2.2 Distribution of Population

The distribution pattern of population indicates a concentration of population in the eastern part of the country, which is relatively developed in comparison with the western part, and 97.6% of the total population resides in the eastern region. The western region comprises almost 61% of the total land area, but has no significant industry except for livestock grazing, since most of the area is flat grass land covered by shrubbery which can only be used for grazing. Thus, while the population density of the eastern region 25 per km², while the western region is only 0.4 per km².

The annual population growth rates in urban and the rural areas during 1982-1992 are 4.9% and 1.6%, respectively, clearly indicating the continuing trend of concentration of the population in urban areas. Presently, 50.5% of the total population is considered urban populace.

Figure 1.2.2.1 Population Density by Department, 1992



Source: Censo Nacional de Poblacion y Viviendas, 1992

1.2.3 Households

According to the 1992 census, the total number of households is 868,284, and the average number of families per household is 4.7 (4.6 in urban areas, 4.9 in rural areas). The average family is comprised of 2.5 persons of more than 18 years old and 2.2 persons of less than 18 years old.

Table 1.2.3.1 Number of Household by Department, 1972, 1982, 1992

Department		1972	1982	1992
Asunción	Urban	7,531	91,526	111,972
	Rural	0	0	0
	Total	7,531	91,526	111,972
1. Concepción	Urban	5,715	6,502	11,257
	Rural	12,646	16,264	20,637
	Total	18,361	22,766	31,894
2. San Pedro	Urban	4,072	5,870	8,252
	Rural	19,748	27,974	47,272
	Total	23,820	33,844	55,524
3. Cordillera	Urban	7,376	10,153	13,677
	Rural	28,351	27,059	30,154
	Total	35,727	37,212	43,831
4. Guairá	Urban	7,145	8,536	11,845
	Rural	15,167	18,082	24,138
	Total	22,312	26,618	35,983
5. Caaguazú	Urban	5,755	11,678	22,046
	Rural	28,182	41,430	52,087
	Total	33,937	53,108	74,133
6. Caazapa	Urban	2,957	3,066	3,903
	Rural	14,707	16,687	22,248
	Total	17,664	19,753	26,151
7. Itapúa	Urban	9,224	13,345	24,789
	Rural	27,268	36,026	51,128
	Total	36,492	49,371	75,917
8. Misiones	Urban	4,389	6,070	10,078
	Rural	7,999	8,790	9,092
	Total	12,388	14,860	19,170
9. Paraguari	Urban	6,626	8,740	10,131
	Rural	31,577	30,058	32,840
	Total	38,203	38,798	42,971
10. Alto Paraná	Urban	2,729	17,103	49,918
	Rural	9,002	21,581	36,405
	Total	11,731	38,684	86,323
11. Central	Urban	27,140	61,703	148,491
	Rural	31,956	39,177	37,777
	Total	59,096	100,880	186,268
12. Neenbucu	Urban	4,652	5,211	7,684
	Rural	9,168	9,220	8,838
	Total	13,820	14,431	16,522
13. Amambay	Urban	4,690	8,624	12,700
	Rural	7,112	4,587	6,667
	Total	11,802	13,211	19,367
14. Canideyu	Urban	559	2,604	3,653
	Rural	4,416	10,288	18,179
	Total	4,975	12,892	21,832
15. Presidente Hayes	Urban	1,635	2,284	4,466
	Rural	5,847	3,780	7,581
	Total	7,482	6,064	12,047
16. Alto Paraguay	Urban	1,559	1,096	978
	Rural	1,205	644	1,493
	Total	2,764	1,740	2,471
17. Chaco	Urban	0	0	0
	Rural	92	46	62
	Total	92	46	62
18. Nueva Asuncion	Urban	0	0	0
	Rural	10	20	254
	Total	10	20	254
19. Boqueron	Urban	533	1,312	240
	Rural	1,530	1,579	5,352
	Total	2,063	2,891	5,592
Total	Urban	172,127	265,423	456,080
	Rural	255,983	313,292	412,204
	Total	428,110	578,715	868,284

Source: "Censo Nacional de Poblacion y Viviendas" (1972, 1982, 1992-Cifras Provisorias),
Secretaria Tecnica de Planificacion

1.3 Economic Situation

1.3.1 Labor Force and Employment Structure

The distribution of employment by industry in 1982 was 47% in primary industries, 21% in secondary industries and 32% in tertiary industries and 96% of the primary industries is farming. Of the secondary industries, 64% is related to manufacturing, while 36% is the construction industry. Of the tertiary industries 56% is in the service sector, while commerce, communication and finance make up smaller shares. According to the Central Bank, the sharing ratio of the primary industry in 1991 decreased to 44%, while that of the tertiary industries increased to 34%. The ratio of the secondary industries remained constant at 22%.

According to the results of the national census of 1982, the employment structure by type of industry and by educational carrier is shown in Table 1.3.1.1 below, and 56.0% of the graduates of the primary education were engaged with the primary industry, the same ratios were 21.5% and 22.4% with the secondary and the tertiary industries respectively. The sharing ratios of the graduates of the secondary level education were 12.4%, 24.1% and 63.5% with the primary, secondary and tertiary industries respectively. As for the graduate of university, most of them engaged with the tertiary industry as the same data shows as 2.7%, 8.1% and 89.2% respectively. Of the employee group who has no school education 79% engaged with the primary industry.

Table 1.3.1.1 Population Economically Active by Educational Career (%), 1982

	No Schooling	Primary Level					Secondary Level	University Level	Not Specified	Total
		Total	1-2 years	3-5 years	6 years	Unknown				
Agriculture	75.7	54.1	72.4	62.9	37.6	26.3	11.1	1.2	50.5	44.9
Livestock Farming	2.5	1.6	1.9	1.8	1.2	1.5	1.2	1.4	1.5	1.6
Hunting & Fishing	0.4	0.3	0.4	0.3	0.2	0.3	0.1	0.0	0.2	0.3
Subtotal	78.7	56.0	74.7	65.0	39.0	28.0	12.4	2.6	52.2	46.8
Mining	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1
Industrial Manufacturing	6.1	13.3	7.6	10.7	19.0	18.6	16.2	7.1	10.5	13.1
Construction	2.9	8.1	4.4	6.8	10.6	13.5	7.8	1.0	6.8	7.3
Subtotal	9.2	21.5	12.3	17.7	29.8	32.2	24.1	8.1	17.5	20.6
Electricity & Water Services	0.0	0.1	0.1	0.1	0.2	0.2	0.7	1.1	0.2	0.3
Commerce	4.0	6.2	4.8	5.1	7.6	10.2	15.6	14.2	7.2	8.2
Hotels and Restaurant	0.3	0.7	0.4	0.5	1.0	1.4	1.4	0.6	0.7	0.8
Transport & Communications	0.7	2.5	1.1	1.8	3.9	4.4	6.4	3.7	2.8	3.2
Finance, Insurance & Real Estate	0.1	0.3	0.1	0.2	0.4	0.6	4.0	23.3	1.1	1.9
Social services	7.1	12.7	6.6	9.7	18.2	23.1	35.5	46.3	18.3	18.3
Subtotal	12.1	22.4	13.0	17.3	31.2	39.7	63.5	89.2	30.3	32.7
Total Employment	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Censo Nacional Población y Viviendas, 1982

1.3.2 Economic Growth

Agriculture and livestock are the pillars of the economic structure of Paraguay. While the economy has expanded 3.2 times from Gs. 295,319 billion to Gs. 950,208 billion from 1970 to 1991 according to the record of the Gross Domestic Products (GDP) since 1970, the importance of agriculture in the economic structure has not changed.

The growth of the GDP during the 1970's has had been attributed to the expansion of the domestic economy stimulated by both the construction of the largest dam in the world by the Itaipú Dam Construction Project and by the inter-regional economic stimulation from the solid economic performance of neighboring countries such as Brazil and Argentina. The GDP has grown steadily since 1981. However, the inflow of the US Dollar has decreased since the completion of such major works as the Itaipú Dam Construction Project, which gave substantial economic stimulus to the Paraguayan economy. In addition to this, the exports of major traditional export commodities such as agricultural goods and their processed products have decreased due to a mixture of sharp inflation of prices and mismatching of the official exchange rate of Guaraní

against the US Dollar, which had been fixed at Gs.126/US\$ since 1960 and failed to reflect the real economic circumstances. Consequently, the economic growth rate in 1982 compared with the previous year was negative 1%, and was negative 3% in 1983.

In July 1982, the Government of Paraguay abandoned a part of efforts to maintain the official exchange rate at Gs.126/US\$, thereby trying to revise the exchange market in order to reflect the real value of the Guaraní. Furthermore, the Government tried to revive the economy by applying different exchange rates to different export and import commodities. In 1989, the exchange market was transformed to a free exchange market. As a result the growth rate showed increase of 3.1% in 1984. The economy has been growing steadily ever since. However, due to a fall in the growth rate of the agricultural sector from 7.7% (compared with the previous year) to 2.2%, the growth rate of the GDP slipped from 5.8% to 3.1% in 1990. In 1991, the integrated economic growth rate remained at 2.5% due to the continuing impact of the poor growth of the agricultural production.

Table 1.3.2.1 GDP by kind of Economic Activity (Millions of Guaranies at 1982 Constant Prices)

Economic Activity	1970	1980	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Agriculture		114,677	111,418	119,663	126,865	110,880	121,635	143,530	157,610	159,082	159,082	152,080
Livestock Farming		56,506	55,489	57,771	59,430	60,819	62,134	63,874	66,643	69,847	69,847	74,108
Exploitation Forestal		18,370	18,039	18,490	18,649	20,837	22,087	23,390	24,349	25,201	25,201	26,319
Hunting and Fishing		1,092	1,045	1,066	1,098	1,131	1,165	1,200	1,225	1,255	1,255	1,285
Sub-total of Production in Agricultural Industry	89,846	172,524	190,645	185,991	196,990	206,042	193,467	207,021	231,994	249,827	255,385	253,792
(%)	(30.4%)	(25.2%)	(26.0%)	(26.7%)	(26.9%)	(25.2%)	(25.9%)	(25.9%)	(27.3%)	(27.8%)	(27.5%)	(26.7%)
Mining	219	2,869	3,142	2,912	2,942	3,073	3,440	3,646	3,920	4,147	4,300	4,515
Industrial Manufacturing	54,267	120,422	120,966	115,861	121,075	127,129	125,345	129,732	137,309	145,410	159,045	150,884
Construction	7,141	45,164	49,544	46,720	45,604	45,148	45,600	46,512	47,742	48,936	48,486	49,940
Sub-total of Production in Manufacturing	61,627	168,255	173,652	165,493	169,621	175,350	174,385	179,890	188,971	198,493	201,831	205,139
(%)	(20.9%)	(24.6%)	(23.6%)	(23.1%)	(23.0%)	(22.9%)	(22.8%)	(22.5%)	(22.2%)	(22.1%)	(21.8%)	(21.6%)
Total Production of Goods	151,473	340,779	364,297	351,484	366,611	381,392	367,852	386,911	420,965	448,320	457,216	458,931
(%)	(51.3%)	(49.8%)	(49.4%)	(49.2%)	(49.9%)	(49.8%)	(48.0%)	(48.4%)	(49.5%)	(49.8%)	(49.3%)	(48.3%)
Electricity*	2,794	14,025	15,778	15,014	15,344	16,255	18,060	19,505	21,368	22,732	25,960	26,886
Water and Sanitary Services		2,342	2,765	2,820	2,993	3,158	3,316	3,455	3,583	3,974	3,974	4,026
Transport and Communication	11,702	29,551	31,107	30,742	31,853	33,468	35,142	39,899	39,149	41,028	42,546	44,673
Sub-total of Basic Services	14,496	43,576	49,227	48,521	50,017	52,716	56,360	59,720	63,972	67,343	72,480	77,385
(%)	(4.9%)	(6.4%)	(6.7%)	(6.8%)	(6.8%)	(6.9%)	(7.4%)	(7.5%)	(7.5%)	(7.5%)	(7.8%)	(8.1%)
Commerce and Finance	78,258	185,028	196,158	190,171	193,634	202,759	209,437	216,767	225,640	236,136	244,732	255,425
Government Services	16,955	25,728	32,858	32,172	32,953	33,941	34,620	35,312	35,850	40,594	41,774	43,027
(%)	(5.7%)	(3.8%)	(4.5%)	(4.5%)	(4.5%)	(4.4%)	(4.5%)	(4.4%)	(4.2%)	(4.5%)	(4.5%)	(4.5%)
Dwellings	10,699	21,479	22,500	21,448	21,448	21,662	22,056	22,538	22,989	23,541	24,100	24,944
Other Services	23,438	68,096	72,000	71,133	72,243	72,688	75,858	78,134	80,791	83,566	87,015	90,496
Sub-total of Services	129,350	300,331	323,516	314,924	320,278	332,050	342,011	352,751	365,270	383,837	397,621	413,892
Total Production of Services	143,846	343,907	372,743	363,445	370,295	384,765	398,371	412,471	429,242	451,180	470,101	491,277
(%)	(48.7%)	(50.2%)	(50.6%)	(50.8%)	(50.2%)	(50.2%)	(52.0%)	(51.6%)	(50.5%)	(50.2%)	(50.7%)	(51.7%)
Gross Domestic	295,319	684,686	737,040	714,929	736,906	766,158	766,223	799,382	850,207	899,500	927,517	950,208
(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

Source: "Cuentas Nacionales", 1982/1992 (Edición Corregida), Banco Central del Paraguay

Table 1.3.2.2 Growth in GDP

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Agriculture	0.4%	-2.4%	5.9%	4.6%	-6.1%	7.0%	12.1%	7.7%	2.2%	-0.6%
Manufacturing	-4.3%	-4.7%	2.5%	3.4%	-0.6%	3.2%	5.0%	5.0%	1.7%	1.6%
Basic Services	8.8%	-1.4%	3.1%	5.4%	6.9%	6.0%	7.1%	5.3%	7.6%	6.8%
Services	-1.3%	-2.7%	1.7%	3.7%	3.0%	3.1%	3.5%	5.1%	3.6%	4.1%
Total	-1.0%	-3.0%	3.1%	4.0%	0.0%	4.3%	6.4%	5.8%	3.1%	2.5%

Source: "Cuentas Nacionales", 1982/1992 (Edición Corregida), Banco Central del Paraguay

1.3.3 Price Movement and Inflation

The trend of increasing prices is shown in Table 1.3.3.1 which is estimated based on 1985 prices. However, Paraguay's consumer price index increased from 100 (1985) to 427 (1991), showing that the consumer prices in Paraguay are comparatively stable when compared with the neighboring countries of Argentina, Brazil, Uruguay and Bolivia.

Table 1.3.3.1 Indices of Prices of Commodities

year	Consumer Price	Annual Inflation Rate	Whole Sale Price
	Index: Base 100 = 1985	Based on Average of Monthly Data (%)	Index Base 100 = 1985
1985	100.0		100.0
1986	131.7	31.7	145.2
1987	160.5	21.9	162.4
1988	197.4	23.0	206.3
1989	248.7	26.0	251.6
1990	343.7	38.2	390.2
1991	427.0	24.3	514.0

Source: "Cuentas Nacionales", 1982/1992 (Edicion Corregida), Banco Central del Paraguay

1.4 Trade and International Balance of Payment

1.4.1 Trade

The Major export commodities are cotton, soya beans, livestock products, forestry products, vegetable oil, perfume oil, tobacco leaves. The major import commodities are machinery, fuel, transport equipment, food products. This implies that the trade structure of Paraguay is typical of the structure prevailing in developing countries, i.e., exporting agricultural products, livestock products and related processed products, while importing capital goods, industrial products and consumer goods.

1.4.2 International Balance of Payment

The foreign currency reserve was US\$676 million in 1990 as shown in Table 1.4.2.1. The total accumulated debt to foreign creditors has increased gradually since 1985 and reached US\$ 1.7 million in 1990.

Table 1.4.2.1 Foreign Currency Reserve at the Central Bank and Accumulated External Debt (Publicly Guaranteed) (in Thousand US\$)

	Foreign Currency Reserve	Disbursement (Balance at the end of the year)	Payment of Debt
1985	479,234	1,521.1	168.3
1986	397,516	1,712.2	210.9
1987	437,314	1,890.5	295.0
1988	304,238	1,842.3	283.0
1989	427,910	1,995.0	130.0
1990	676,303	1,699.7	

Source: "Boletin Estadistico", Banco Central Del Paraguay

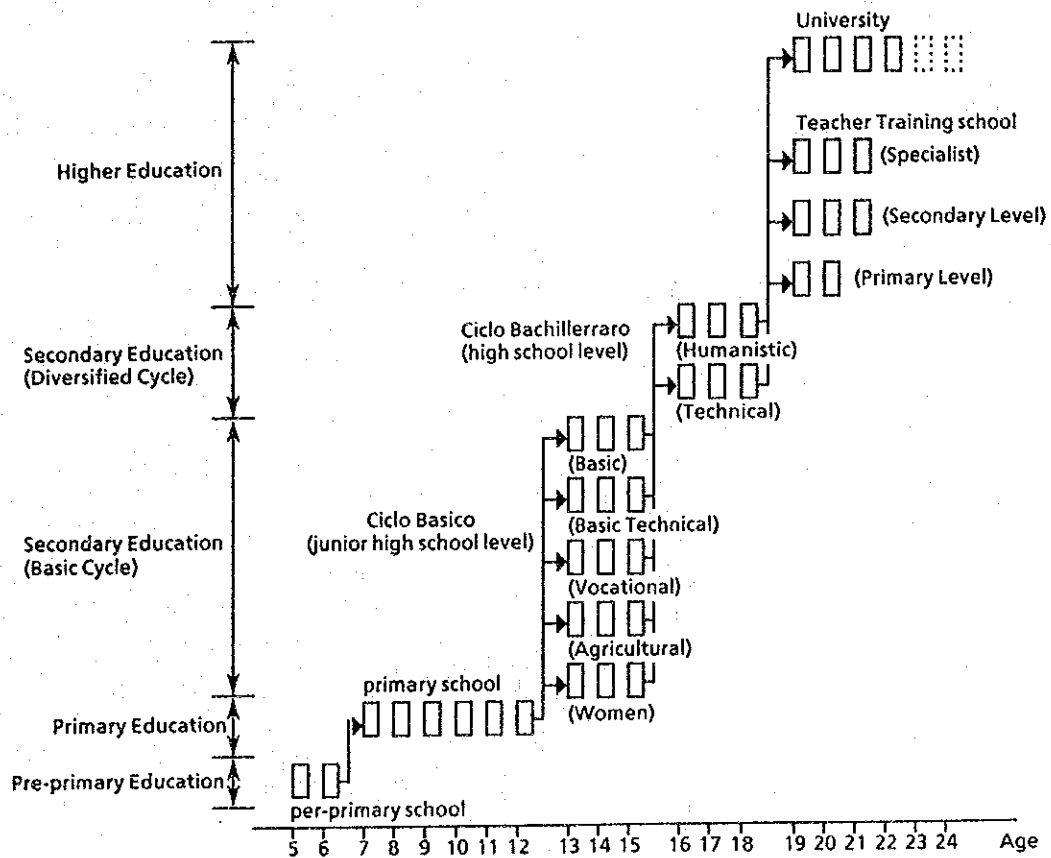
CHAPTER 2 EDUCATIONAL CONDITIONS

2.1 Educational Administration and Finance

2.1.1 School Education System

The present system of school education in Paraguay was established during the period from 1970 to 1973. The system is composed of stages from pre-primary education, primary education, secondary education to higher education. The present school education system is shown in Figure 2.1.1.1.

Figure 2.1.1.1 School Education System



2.1.2 Educational Administration and Organization

The MEC is responsible for national education as well as for cultural and religious affairs and is internally composed of 12 departments such as the Primary Education Department. The Teleducation Department of the MEC is under the control of the Under-secretary of State for Culture and employed 42 staff in 1992.

The organization charts of the MEC and Teleducation Department are as shown on Figure 2.1.2.1 and Figure 2.1.2.2 respectively.

Figure 2.1.2.1 Organization Chart of the MEC

MINISTERIO DE EDUCACION Y CULTO
 ESTRUCTURA ADMINISTRATIVA
 AÑO : 1991 -

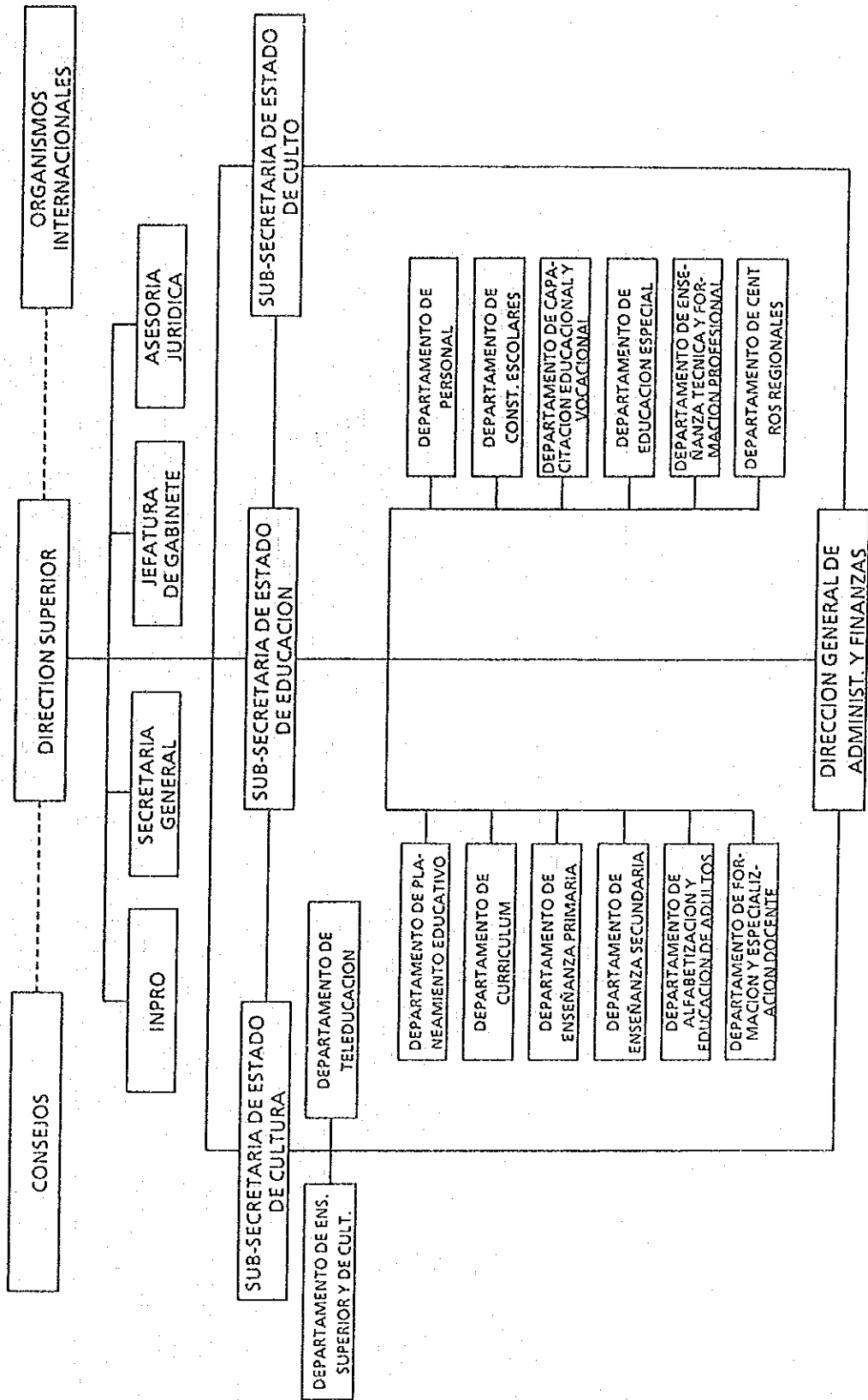
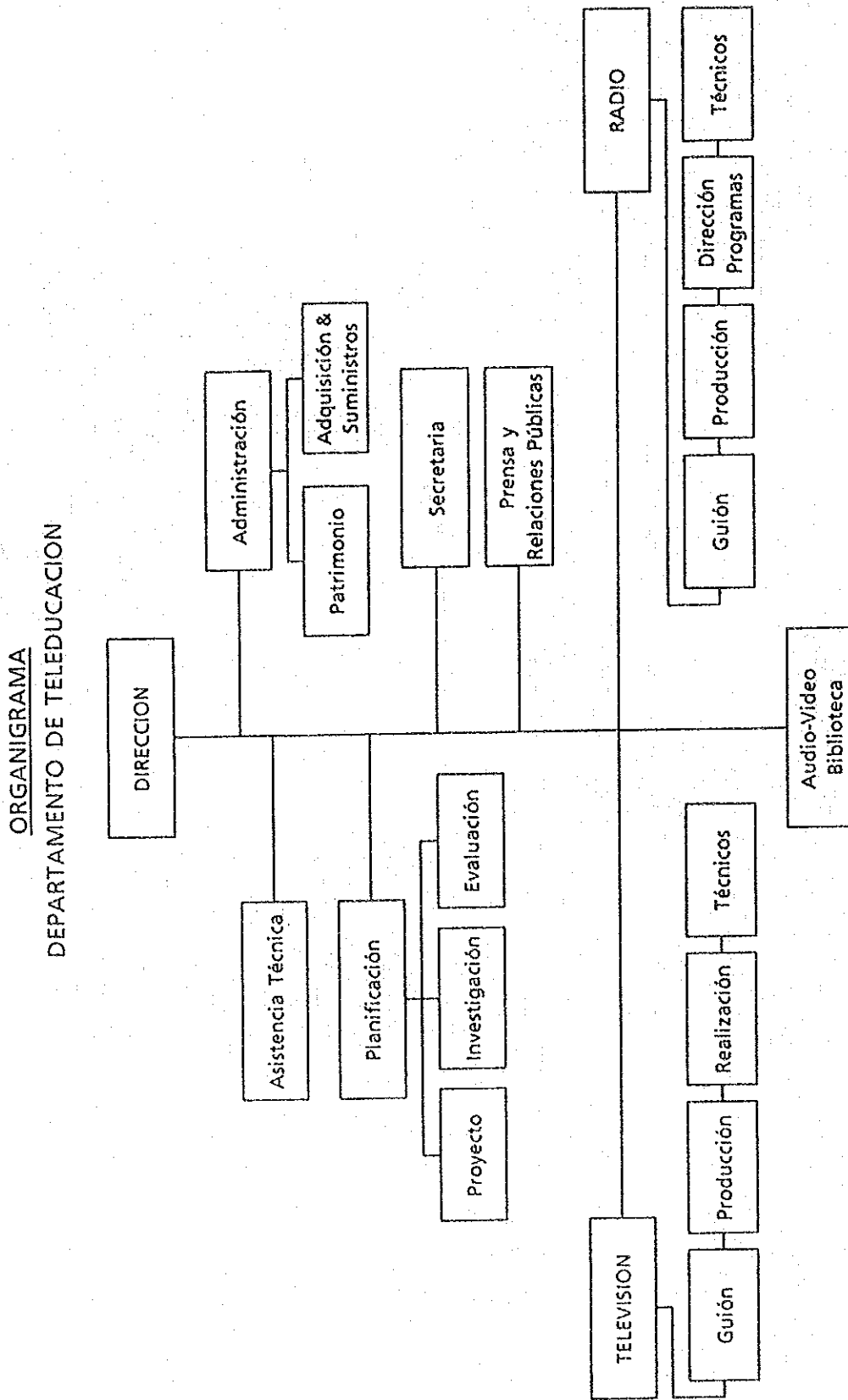


Figure 2.1.2.2 Organization Chart of Teleeducation Department



2.1.3 Educational Finance

The budget allocated for the MEC has always been about 20% of the total amount of the budget appropriated for the government administration. It has increased in correspondence with the increase in the total national budget. A substantial portion of the budget is spent on the payment of salaries to teachers and staff of the MEC, while investment funds available for construction and maintenance of educational facilities such as school buildings, purchase of equipment etc. have been very limited.

Table 2.1.3.1 Increasing Ratio of National Budget and Budget of MEC

Year	National Budget (Gs.,000)	Increased Ratio (%)	Budget of MEC (Gs.,000)	Increased Ratio (%)	Sharing Ratio (%)
1986	141,947,972	-	20,225,201	-	14.0
1987	182,202,466	29.0	26,210,335	30.0	14.0
1988	250,679,139	37.0	31,937,419	22.0	13.0
1989	481,576,000	92.0	56,512,000	77.0	12.0
1990*1/	815,796,997	69.0	74,387,406	32.0	9.0
1991*2/	1,505,600,486	85.0	154,328,276	108.0	10.0

Remarks:

*1/ Approved budget by Law 47/89, supplement budget of last quarter in 1990 is not adjusted in to this figure.

*2/ Approved budget by Law 110/90 in 1991 fiscal year.

Source: Educational Planning Department, MEC

Table 2.1.3.2 Composition of Budget for MEC

(Units: Gs. million)

	1991	1992
Total Budget	154,676 (100.00%)	249,750 (100.00%)
Personnel Expenditure	140,55 (90.88%)	203,660 (81.54%)
Non-personnel Expend	4,837 (3.12%)	19,472 (7.80%)
Capital expenditure	9,284 (6.00%)	26,611 (10.66%)

Source: MEC

2.2 Current Situation of School Education

2.2.1 Primary Education

Primary education is compulsory without tuition for all children from seven to twelve years of age. Education is recognized as a continuous process leading towards individual growth and the primary education is considered the entry point to an educational system whose philosophy is to provide maximum growth and development opportunities on a non-discriminatory basis to all Paraguayan children.

In the reform plan for the primary education submitted at the National Congress on Education in December 1992, it was proposed to lower the start of school age to five or six years old and to expand the duration of the primary education to ten years.

In 1991, the primary education system served 720,983 urban and rural children at some 4,500 schools.

Table 2.2.1.1 Enrollment and schools in Primary Schools by Department, 1991

Department	Total	Urban		Rural	
		Number	(%)	Number	(%)
Asuncion	77,456	77,456	100.0	0	0.0
1 Concepción	34,853	11,660	33.5	23,193	66.5
2 San Pedro	54,864	8,447	15.4	46,417	84.6
3 Cordillera	39,663	15,058	38.0	24,605	62.0
4 Guaira	30,979	10,763	34.7	20,216	65.3
5 Caaguazu	76,917	19,542	25.4	57,375	74.6
6 Caazapa	26,817	4,358	16.3	22,459	83.7
7 Itapua	74,039	21,719	29.3	52,320	70.7
8 Misiones	18,550	8,212	44.3	10,338	55.7
9 Paraguari	40,029	12,306	30.7	27,723	69.3
10 Alto Parana	67,801	33,394	49.3	34,407	50.7
11 Central	123,465	70,001	56.7	53,464	43.3
12 Ñeembucu	12,189	6,315	51.8	5,874	48.2
13 Amambay	14,331	10,029	70.0	4,302	30.0
14 Canindeyu	16,739	3,488	20.8	13,251	79.2
15 Presidente Hayes	9,075	5,065	55.8	4,010	44.2
16 Alto Paraguay	2,244	1,781	79.4	463	20.6
17 Chaco	119	0	0.0	119	100.0
18 Nueva Asuncion	37	0	0.0	37	100.0
19 Boqueron	816	354	43.4	462	56.6
Total	720,983	319,948	44.4	401,035	55.6

Source: Anuario 1991, Desarrollo Educativo de Cifras, MEC

Enrollment rates at the primary education are relatively high. The average national enrollment rate has increased from 90% to 94% during the period from 1980 to 1990. The enrollment rates by department range from 72% to 124%. Table 2.2.1.2 provides enrollment rates for each department in 1990.

Table 2.2.1.2 Enrollment Rates by Department (1990)

Department	%
Average of the country	94
Asunción	<u>107</u>
1 Concepción	80
2 San Pedro	87
3 Cordillera	<u>96</u>
4 Guaira	93
5 Caaguazú	82
6 Caazapa	<u>96</u>
7 Itapua	<u>102</u>
8 Misiones	<u>99</u>
9 Paraguari	90
10 Alto Parana	<u>95</u>
11 Central	<u>104</u>
12 Ñeembucu	85
13 Amambay	80
14 Canindeyu	72
Western Region	124

Source; "La Educación en el Paraguay", MEC

Most of schools are not facilitated with a laboratory or an audio-visual room, and many schools do not even have a school library. A more serious problem is that there are many schools which do not have enough classrooms to serve pupils at every grade from first to sixth. As given in Table 2.2.1.3, "so-called incomplete schools", which do not have a capacity for all grades up to the sixth accounted for 27% of the total primary schools.

Table 2.2.1.3 Incomplete Schools at the Primary Education, 1991

	Total		Urban		Rural	
	Number	(%)	Number	(%)	Number	(%)
Up to 1st Grade	25	0.6	15	1.7	10	0.3
Up to 2nd Grade	184	4.1	58	6.5	126	3.5
Up to 3rd Grade	372	8.2	56	6.3	316	8.7
Up to 4th Grade	384	8.5	57	6.4	327	9.0
Up to 5th Grade	252	5.6	25	2.8	227	6.2
Complete	3,309	73.1	677	76.2	2,632	72.3
Total	4,526	100.0	888	100.0	3,638	100.0

Source: Anuario 1991, Desarrollo Educativo en Cifras, MEC

Despite the increase in enrollment and in school buildings, considerably less progress in educational attainments still remains to be a problem in Paraguay, particularly in rural areas. Students flow is a good proxy for measuring the efficiency of formal education in terms of the attainment of basic objectives required for the primary level.

In 1991, as provided by Table 2.2.1.4, the number of repeaters totaled some 64,133 corresponding to 9% of the total pupils enrolled. Out of all repeaters in 1991, 63% were in rural areas.

Table 2.2.1.4 Repeaters at the Primary Level Education, 1991

Grade	1st	%	2nd	%	3rd	%	4th	%	5th	%	6th	%	Total	%
Urban	8,227	12.1%	6,276	10.2%	4,599	8.1%	2,692	5.3%	1,635	3.6%	408	1.1%	23,837	7.5%
Rural	13,868	13.8%	11,267	13.0%	8,059	10.8%	4,717	7.9%	1,916	4.2%	469	1.4%	40,296	10.0%
Total	22,095	13.1%	17,543	11.8%	12,658	9.7%	7,409	6.7%	3,551	3.9%	877	1.2%	64,133	8.9%

%;percentage of repeaters to total pupils at respective grade

Source: Anuario 1991, Desarrollo Educativo en Cifras, MeC

Desertion is also a major problem in the system. As shown in Table 2.2.1.5, retention rate, which is defined as the rate of pupils in sixth grade in 1991 to pupils who entered primary school in 1986, is 50.6% on the average of the country. Out of all pupils who were enrolled at first grade in the five years before, 78% of pupils in urban area and only 36% in rural area retained and promoted to sixth grade.

Table 2.2.1.5 Retention Rates at the Primary Education, 1991

Year	Grade	Total Retained		Urban		Rural	
		Number	(%)	Number	(%)	Number	(%)
1986	1st Grade	141,793	-	49,021	-	92,772	-
1987	2nd Grade	122,123	86.1	49,005	100.0	73,118	78.8
1988	3rd Grade	111,369	78.5	48,148	98.2	63,221	68.1
1989	4th Grade	96,545	68.1	44,834	91.2	51,711	55.7
1990	5th Grade	82,900	58.5	41,762	85.2	41,138	44.3
1991	6th Grade	71,778	50.6	38,215	78.0	33,563	36.2

Source: Anuario 1991, Desarrollo Educativo en Cifras, MEC

The number of teachers in primary schools amounted to 18,976 in 1991. Out of this number, 23.5%, 4,462, are unqualified teachers. MEC's data shows that there were 31,902 teaching posts in 1991, which means an average teacher took 1.7 posts or worked 1.7 shifts a day. To assign one teacher for one teaching post or shift, additional 13,000 teachers would be required even at present. Further more, 53% of teaching posts, amounting to 1,608 posts, are occupied by unqualified teachers. This condition is considered as one of main causes of the current quality of education.

Table 2.2.1.6 Teachers at the Primary Education, 1991

Category	Number	(%)
Qualified Teachers	14,514	76.5
Unqualified Teachers	4,462	23.5
Total	18,976	100.0

Source: Memoria, 1991, Departamento Enseñanza Primaria, Mec

2.2.2 Secondary Education

The secondary education is not compulsory. The secondary education in Paraguay consists of two cycles, each requiring three years for completion: the Basic Cycle, and Diversified Cycle leading to Bachillerato. Entrance to the Basic Cycle is open to all those who have completed the primary education. Entry into the Basic Cycle is at about age 13; by the time they are 16 years old, students begin the Diversified Cycle.

Two types of preparation are offered in the Diversified Cycle. The one is in the humanities, leading to entrance into an university or a teacher training institute. Graduates of the technical track are qualified to enter a number of post-secondary institutions to pursue studies in the commercial, industrial or agricultural fields.

In 1991, enrollment rate at the secondary level, whose school-age is corresponding to 13 to 18 years old, is estimated to be 28% and increased from 24% in 1980. As shown in Table 2.2.2.1, nearly 166,894 were enrolled in secondary schools. Male/female breakdown was 81,687 to 85,207, respectively.

Table 2.2.2.1 Enrollment at the Secondary Education by Department, 1991

Department	Total	Urban		Rural	
		Number	(%)	Number	(%)
Asuncion	50,879	50,879	100	0	0
1 Concepción	5,858	4,375	75	1,483	25
2 San Pedro	6,253	4,176	67	2,077	33
3 Cordillera	8,360	6,847	82	1,513	18
4 Guaira	5,237	4,822	92	415	8
5 Caaguazu	9,756	8,219	84	1,537	16
6 Caazapa	2,964	2,490	84	474	16
7 Itapua	9,720	8,811	91	909	9
8 Misiones	4,437	3,958	89	479	11
9 Paraguari	8,114	6,973	86	1,141	14
10 Alto Parana	11,387	10,541	93	846	7
11 Central	34,046	30,857	91	3,189	9
12 Ñeembucu	3,006	2,803	93	203	7
13 Amambay	3,614	3,498	97	116	3
14 Canindeyu	1,479	990	67	489	33
15 Presidente Hayes	1,112	751	68	361	32
16 Alto Paraguay	192	170	89	22	11
17 Chaco	0	0		0	
18 Nueva Asuncion	0	0		0	
19 Boqueron	480	231	48	249	52
Total	166,894	151,391	91	15,503	9

Source: Anuario 1991, Desarrollo Educativo de Cifas, MEC

Students in Basic Cycle (Ciclo Basico) shared 66% and in Diversified Cycle (Ciclo Bachillerato), humanistic course (general academic course) and commercial course, which includes some industrial subjects, accounted for 28.5% and 5.5% respectively.

Lack and poor conditions of school building and facilities, many of which are not arranged well from pedagogical viewpoint, similar to the primary education, are large obstacles for the spread of the secondary education.

Table 2.2.2.2 Incomplete Secondary Schools, 1991

	Total	Official	Private	Urban	Rural	(%)
C. Bas.	260	176	84	128	132	30.9
(%)		67.7	32.3	49.2	50.8	
C. Bas. + Bac. Hum.	477	364	113	397	80	56.7
(%)		76.3	23.7	83.2	16.8	
C. Bas. + Bac. Com.	24	21	3	21	3	2.9
(%)		87.5	12.5	87.5	12.5	
C. Bas. + Bac. Hum. + Bac. Com.	76	62	14	75	1	9.0
(%)		81.6	18.4	98.7	1.3	
Bac. Com.	5	4	1	4	1	0.6
(%)		80.0	20.0	80.0	20.0	
Total	842	627	215	625	217	100.0
(%)		74.5	25.5	74.2	25.8	

Source: Anuario 1991, Desarrollo Educativo en Cifras, MEC

Retention rate at the secondary level is presented in Table 2.2.2.3. The retention rates for the period from 1976 to 1991 did not show a notable improvement despite the continuous growth in enrollment.

Table 2.2.2.3. Retention Rates at the Secondary Level Education

	1971-1976	1976-1981	1981-1986	1986-91
Nos. of Students enrolled	16,622	22,820	33,581	35,484
Nos. of Students Retained	7,466	11,835	15,668	15,793
Retention Rate	44.9	51.9	46.7	44.5

Source: Anuario, 1976, 1981, 1986, 1991, Desarrollo Educativo en Cifras en Cifras, MEC

Number of teachers for the secondary education was 7,817 in 1991. Out of this 1,550 (20%), were unqualified teachers. At the secondary level like the primary education, an average teacher is in charge of 1.5 shifts a day at present.

2.2.3 Higher Education

(1) University Education

There are two major universities in Paraguay both located in Asunción. The National University of Asunción (UNA) was founded in 1889 with the faculties of law and medicine, while privately supported Catholic University is quite different, although there is some overlap in certain programs. The Catholic University has emphasized administrative sciences, while the National University is a comprehensive institution that offers preparation in a variety of professional areas.

Asunción University has faculties such as laws and social science, odontology, physical science and mathematics, architecture, economics, chemistry, agronomical engineering, philosophy, medical science, engineering and veterinary as well as institutes of health, basic science, linguistics, electronic engineering, and geographic science and school of bibliography. It has branch schools in Concepción, Misiones, Ciudad del Este and Pedro Juan Caballero to meet with local demands. Total number of students was 18,881 in 1989 and 19,757 in 1990. Duration of the study is 4 to 6 years depending on the specialty.

Catholic University, having its origin in school of theology, has faculties such as accounting and administration, laws, philosophy and human science, science and technology, and institute of high technology. It also has branch schools in Concepción, Encarnación, San Ignacio, Ciudad del Este, Pedro Juan Caballero, Villarrica, Colonel Oviedo and Caaguazu. Number of the students in Catholic University totaled 9,690 in 1990.

Enrollment rate in university education to population of 20 to 24 years old is estimated at 8% according to the statistics by the UNESCO. The formulation of admission policy is one of the many problems facing the UNA. With a steady growing number of students graduating from secondary schools, there is a pressure on the university to admit more students each year. In 1991, the university admitted 35% out of applicants. The figure increased to 43% in 1992.

(2) Teacher Training

1) ISE (Higher Institute for Education)

The ISE is the central institution for teacher training in Paraguay and has the following functions.

- teacher training (for the pre-primary, primary and secondary education)
- training of education experts
- education and re-training of incumbent teachers
- surveys and research on educational issues
- preparation of educational programs and plans
- planning and production of educational materials, including AV materials

2) CREs (Regional Education Centers)

A CRE is a general educational institution which train teachers and provides education (the pre-primary, primary and secondary level) at its facilities. A CRE is not only a school but also acts as an education center in its respective service area, serving as an administrative and technical institution dealing with issues relating to education in the region. As the MEC has been implementing an education decentralization process to make educational activities reflect the conditions, potential, infrastructure and requirements of education in each locality, the importance of CREs is expected to grow in the future.

3) IFDs (Teacher Training Institutes)

The activities of IFDs are largely classified into the following 3 categories.

- teacher training
- retraining of incumbent teachers
- assistance for unqualified teachers to obtain proper qualifications

Most of IFDs provide teacher training courses for primary school teachers but only 2 IFDs provided training courses for secondary school teachers in 1992. The actual training consists of theoretical study and practical training as in the case of CREs.

The provision of assistance for unqualified teachers is conducted through a systematic program which consists of schooling during the summer and winter holidays and home study at other times. The trainees have go back with study modules supplied by the IFDs for home study and also receive direct tutorials at the IFDs. These trainees then become qualified teachers after 3 years of training.

2.3 Current Situation of Technical and Vocational Training

Technical and vocational training are currently one of the major areas of interest of the Government. The role and function of vocational education are now perceived as having immediate relevance for fulfillment of Paraguay's development objectives.

Facilities and courses supervised by the MEC are as follow:

- (a) Professional Training Course (at CEV-Centro Entrenamiento Vocacional, etc.)
- (b) Bachillerato Técnico Course (at Colegio Nacional Técnico, etc.)
- (c) Basico Técnico Course

2.4 Current Situation of Other Education Branches

2.4.1 Literacy and Adult Education

According to the national census in 1982, illiterate people aged 15 years or more totaled 380,386. Male and female breakdown was 166,420 (43.8%) to 213,966 (56.2%) respectively. Urban areas had 97,727 (26%) of illiterate persons, while rural areas had 282,659 (74%), almost three times as those in urban areas. Illiteracy rate of the country was 21.2%.

Table 2.4.1.1 Population Aged 15-years or more, Illiterate Population and Illiteracy Rates by Department, 1982

Department	Population aged 15 year or more	Illiteracy	
		Population	Rate (%)
Asunción	323,241	22,431	6.9
1 Concepción	69,920	20,188	28.9
2 San Pedro	97,965	27,417	28.0
3 Cordillera	112,805	25,958	23.0
4 Guaira	82,834	24,576	29.7
5 Caaguazú	160,319	42,418	26.5
6 Caazapa	58,235	19,796	34.0
7 Itapua	145,273	39,107	26.9
8 Misiones	43,916	12,290	28.0
9 Paraguari	118,363	30,739	26.0
10 Alto Parana	110,903	27,028	24.4
11 Central	317,570	44,189	13.9
12 Neembucu	42,072	12,248	29.1
13 Amambay	39,018	10,229	26.2
14 Canindeyu	36,192	14,639	40.4
Occidental Departments	34,980	7,133	20.4
Total	1,793,606	380,386	21.2

Source: Censo Nacional de Población y Viviendas, 1982

Literacy and adult education take place in 2 forms, i.e. formal and non-formal education. The former includes literacy education in the narrow sense, i.e. learning of reading and writing, followed by primary level basic education and basic vocational/technical training in such subjects as electrical engineering, carpentry, cooking and sewing. The reading and writing learning period depends on ability and some achieve literacy in 4 months. Basic education is further divided into 3 levels and, therefore, 3 years are required to complete all courses.

Most education is provided in the evening (18:30 - 21:00) as many students of the courses have daytime jobs.

Non-formal education consists of education activities combined with community activities and is designed to make the illiterate actively participate in the productive society through various activities. Some examples are the construction of schools and hospitals, the repair of roads and bridges and the provision of assistance for local health care, all of which aim at improving the living standard and welfare of their own home areas and carrying local development forward.

In 1992, 635 facilities are in operation over the country with total participants of 40,618.

2.4.2 Special Education

The roles of special education consist of providing educational opportunity for children handicapped physically or mentally and of encouraging them to participate in social activities or normal education. As of 1991, 75 facilities are in operation over the country with 2,753 enrolled children in total.

2.5 TV/Radio Education by MRC

The Teleducation Department of the MEC is consisted of TV Program Production Division and Radio Program Production Division, and both have been undertaking the program productions. The TV Program Production Division is actively working than the Radio Program Production at present.

2.5.1 TV Programs

Until 1988, the TV programs have had been produced and broadcast at certain extent as planned at that time, however, only 10 or so programs including spot programs of which duration is 30 seconds have produced during the period of 1990 - 1992. In 1988, a number of programs having considerable educational effect were produced as a series program by outstanding performance of representation and 15 minutes program had been broadcast once a week by using a commercial TV station. As a broadcasting charge of the commercial TV station increased sharply the educational TV broadcasting was terminated due to a lack of budget to cover its cost. Since then, audio-visual education has been limited only to traveling lecture using mobile AV vehicles.

The record of the traveling lectures shows that the number of locations where such lectures held using the mobile AV vehicles for primary and secondary schools, and for social welfare related facilities were 17 and 25 respectively for the period of March - May 1991 alone. It indicates also that the traveling lectures were conducted at geographically widely scattered places in the country.

Although the schedules of program production for 1991 - 1992 were prepared sufficiently, scheduled number of programs to be produced was not accomplished due to a participation of a number of key person to the overseas training in Japan, a lack of budget, breakdown of some equipment, etc. Notwithstanding such circumstance, the quality of program produced was excellent from the view points of performance of representation and content.

A number of programs produced and accumulated by the Teleducation Department to date is around 400. Most of them are of programs which duration are 10 - 15 minutes. It is judged that the programs except series program are difficult to use as a spot program, however, and that some programs record valuable scenery and video which can be utilized satisfactorily as materials.

Following programs were also produced in cooperation with other ministries and agencies:

Type of Programs	Relevant Ministry or Agency
- AIDS, drug preventive campaign	Min. of Health and Social Welfare
- Noxious insect termination campaign	Min. of Agriculture and Livestock
- Anti-crime campaign	Police Department

The plans and contents of these programs can match with the state of affairs in this country.

It was judged through intensive viewing during the course of study, 6 series programs can be used as these are. Other programs can be utilized as materials to produce programs in the future. However, it may require careful checking when it is decided to be used as a material as sound or video quality may inferior and not applicable to broadcasting. The titles of such series programs are as follows:

- Communication (Language)
- Occupational guidance
- Social study
- Time of Culture (Guarani Language Lesson)

- Beautiful Feature of Our Country
- Handicraft Series

In addition to these, around 50 programs donated through the cultural cooperation program of the Government of Japan has been stocked to date. It could be utilized for such program designed to be used as educational scientific programs.

2.5.2 Radio Programs

It is a remarkable matter that the distance education using radio has had been conducted for two years during 1977 - 1978 under the cooperation program of the Government of the U.S.A. This program was called "Rural Radio Education Project" of which target was students over 15 years old and completed 2nd grade of the primary level educational. This program has continued to 1980 successfully even after the termination of the program period by broadcasting such radio program through the national radio station supported by printing and distribution of quality text and achieved a certain results. However, this program was terminated due to lack of budget. In addition to this, the adult education aiming to reduce illiteracy and to educate Guarani language has had been broadcast periodically on monthly basis. However, since 1989, the time allocation for such radio program was called off also. At present radio program production was limited only for spot program. Nevertheless such situation prevails at the moment, radio would be recognized as an important means of distance education in parallel with the TV program when used for quality improvement of national education in Paraguay.

2.5.3 Present Facility and Equipment

Number of equipment related to program production were donated to the MEC in 1984 and 1985 through the technical cooperation programs and as a cultural grant aid of the Government of Japan. The programs have been produced by using such equipment for the past 10 years. It is judged that these equipment are superannuated substantially and are difficult to use for long time in the future.

CHAPTER 3 PRESENT SITUATION OF BROADCASTING AND TELECOMMUNICATION SERVICES

3.1 General

The radio telecommunication is the most important information media for Paraguay whose national population is about 4 million in number almost 98% of which reside in the east half of the land of which area is equivalent to almost 1.1 times of Japan and widely scattered in such vast area. Under such circumstances, the development of public telephone network system has been rapidly progressed as emphasized by the Government in the past 15 years as shown in below Table 3.1.1.

Table 3.1.1 Progress of Public Telephone Network System

Year	1975	1980	1985	1990
Population	2,685,600	3,218,237	3,307,708	4,336,997
Telephone Lines	29,977	49,508	77,134	112,452
Telephone Traffic	1,498,797	6,754,644	12,395,446	28,265,729
Cities w/telephone	206	253	322	371
Telex Lines	198	571	862	827
Nos. of Staff	2,126	2,944	4,488	6,978

Beside the public telephone network system, the television as well as news papers are considered as the important information media for urban residents including those in urban areas at countryside.

The total number of radio receivers has been increased rapidly year by year as estimated about 300,000 units in 1977, 500,000 units in 1982 and 880,000 units in 1989. Radio sets in rural areas surpassed the same in urban areas. About two third of national population considers the radio as a primary source of news and information, however, an importance of the television as the information media increased more and more as diffusion of TV sets progress in Asuncion and other urban and suburban areas in the country side. Although the electric power transmission system has not been able to cover the area where residents are scarce, the number of TV sets have been increasing by means of

using a battery for its power source. At present the number of TV sets in the country is estimated by a private TV station as about 700,000 units (number of household 868,000) or 0.8 unit per household.

3.2 Administrative Structure of Telecommunication and Broadcasting Services

3.2.1 General

The ANTELCO (Administracion National de Telecomunicaciones), a governmental corporation formed under the Ministry of Public Works and Communications (MOPC), is exclusively responsible for planning, operation and maintenance of every kind of public telecommunication system and dominantly operates public telecommunication services including domestic and international telephone services as well as telex services. The ANTELCO is also a supervisory and administrative government agency for allocation of a radio frequency as well as for operation of TV broadcasting services.

3.2.2 The Outline of the ANTELCO

(1) General

The ANTELCO was established on November 26, 1948 by Law No. 56 and organized by Decree No. 2340 of December 30, 1950. Such laws have been revised and modified to form a present legal basis as of Decree NO.102/90 based upon Decree No.23 of May 6, 1989.

(2) Organization

A number of total staff composing this organization is about 6,800. As indicated in Figure 3.2.2.1, 6 departments are under the administration of a council of executive administration, the reformation plan of organization has been still underway since the change of the Government in 1989.

(3) Human Resources Development in the ANTELCO

Under the administration of the Department of Resources, an institute designated to conduct training not only for the staff of the ANTELCO but also the staff of other government agencies, graduates of secondary education level, university students, etc., in connection with the electronic and electric engineering, and operation and management of facilities related to the telecommunications, was organized as Paraguay Telecommunication Institute (Instituto Paraguayo de Telecomunicaciones, IPT). The expansion of the training facilities of IPT has been under construction and is expected to be completed in May 1993 and expected to open in July 1993 with a technical cooperation and a grant aid for the construction works of the Government of Japan to meet with ever expanding requirement and progressing of telecommunication technologies. The planned scale of training per year in terms of number of students and variety of training courses are shown below respectively and its organizational plan is illustrated in Figure 3.2.2.2.

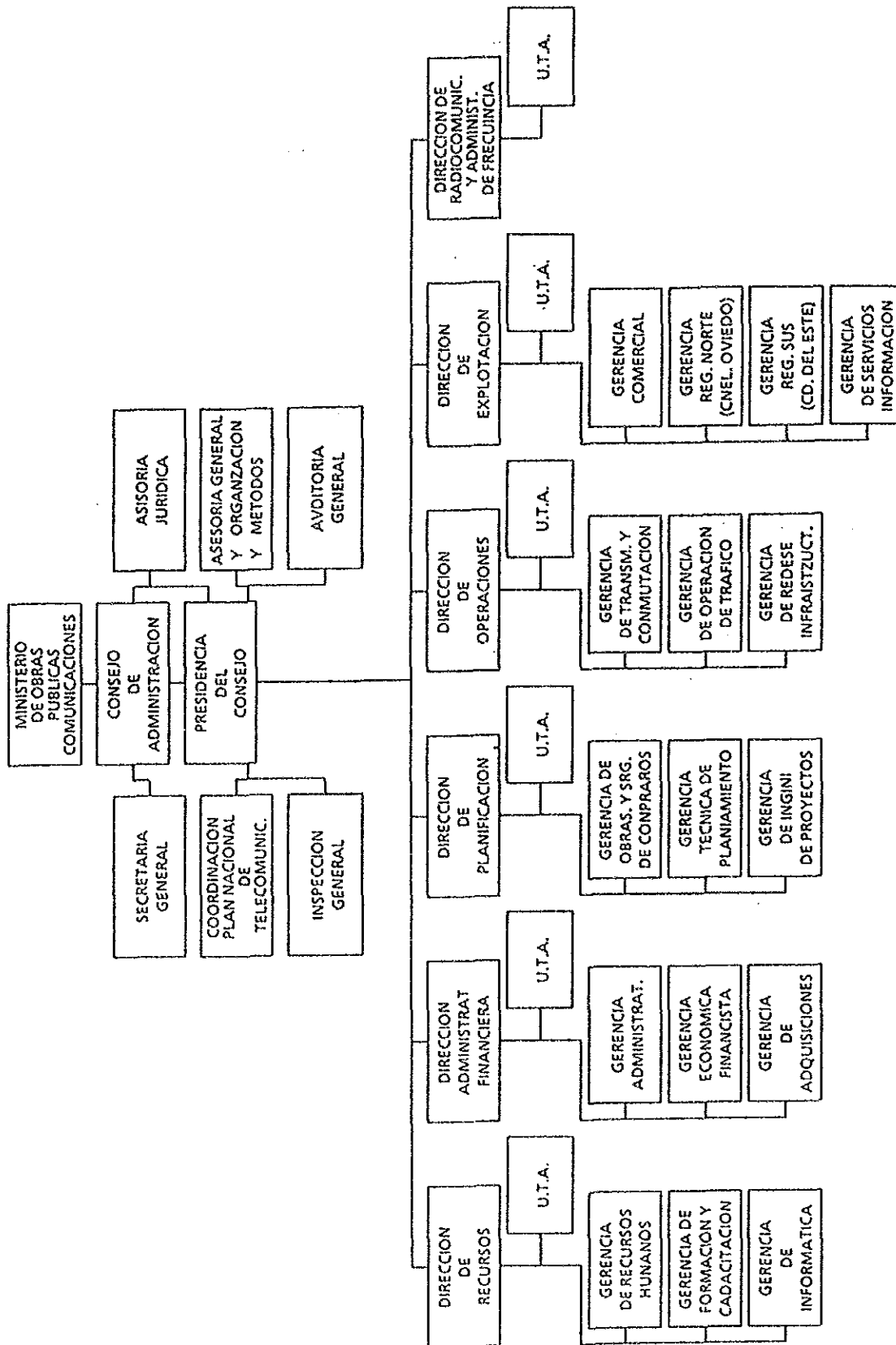
- Staff of the ANTELCO	2,780
- Government staffs	300
- Students of UNA	180
- Technical bachelor	450
- Total	3,660

A variety of training courses is as follows:

A. Area of Basic Training

1. Technical bachelor course
2. Preparatory course for applicants of technical bachelor
3. Course for cadets of police college
4. Course for cadets of military college
5. Course for applicants of school of communication

Figure 3.2.2.1 Organization Chart of ANTELCO



B. Area of Professional Training

1. Telephone traffic operation
2. Telegraphic traffic operation
3. Telegram operation
4. Telex operator Grade I , II , III
5. Supervisory services of telephone traffic
6. Typewriting
7. Foreign language
8. Basic technical course
9. Specialization of transmitting operation
10. Digital communication
11. Television broadcasting
12. Central E.M.D.
13. Computerized information
14. D.O.S.
15. Word processing operation
16. Data-base operation

A number of teachers and instructors in total is planned to be 237. The students are planned to be deployed according to their subjects as illustrated in Figure 3.2.2.3.

Figure 3.2.2.2 Organization Chart of IPT (Plan)

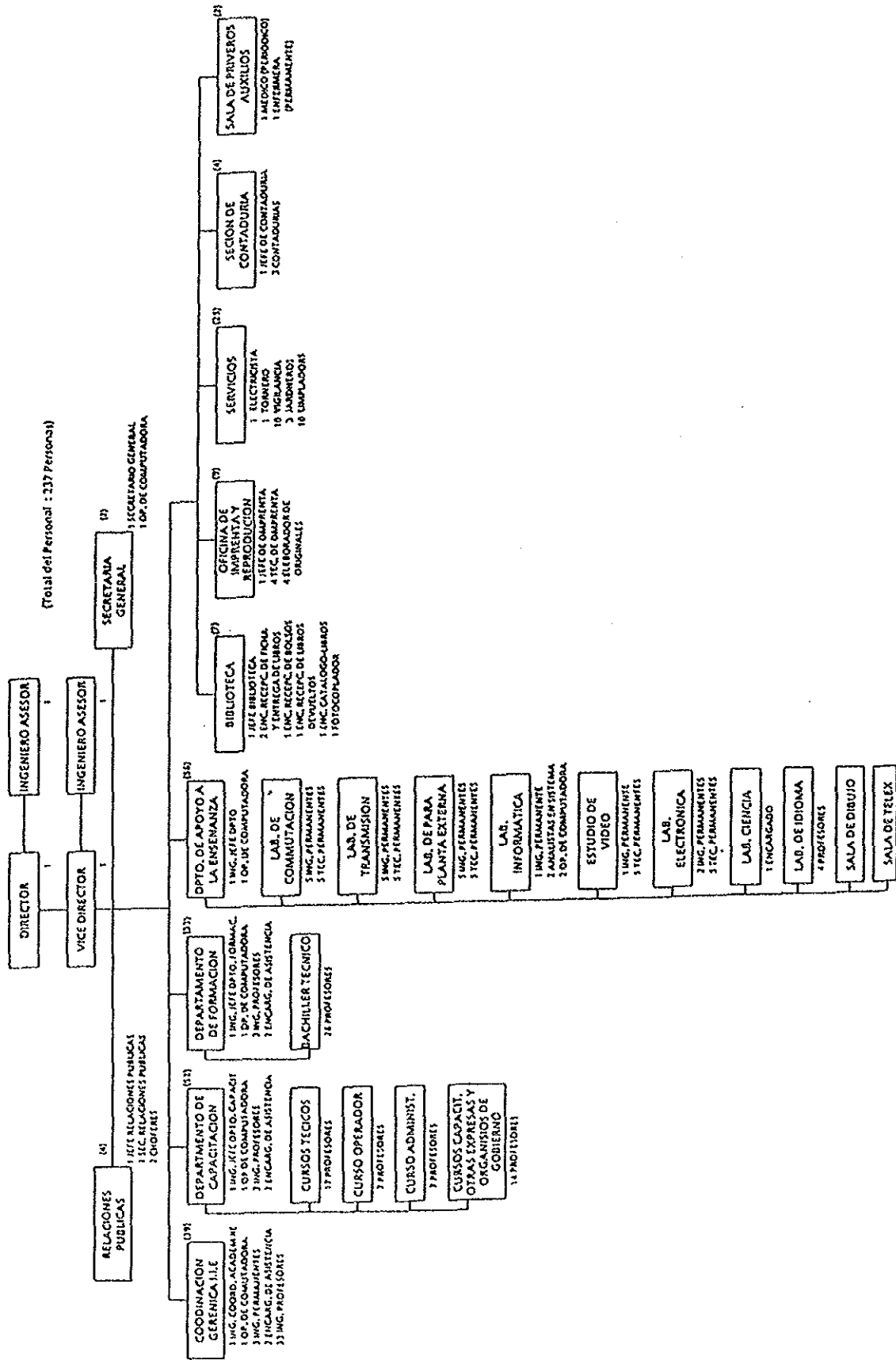
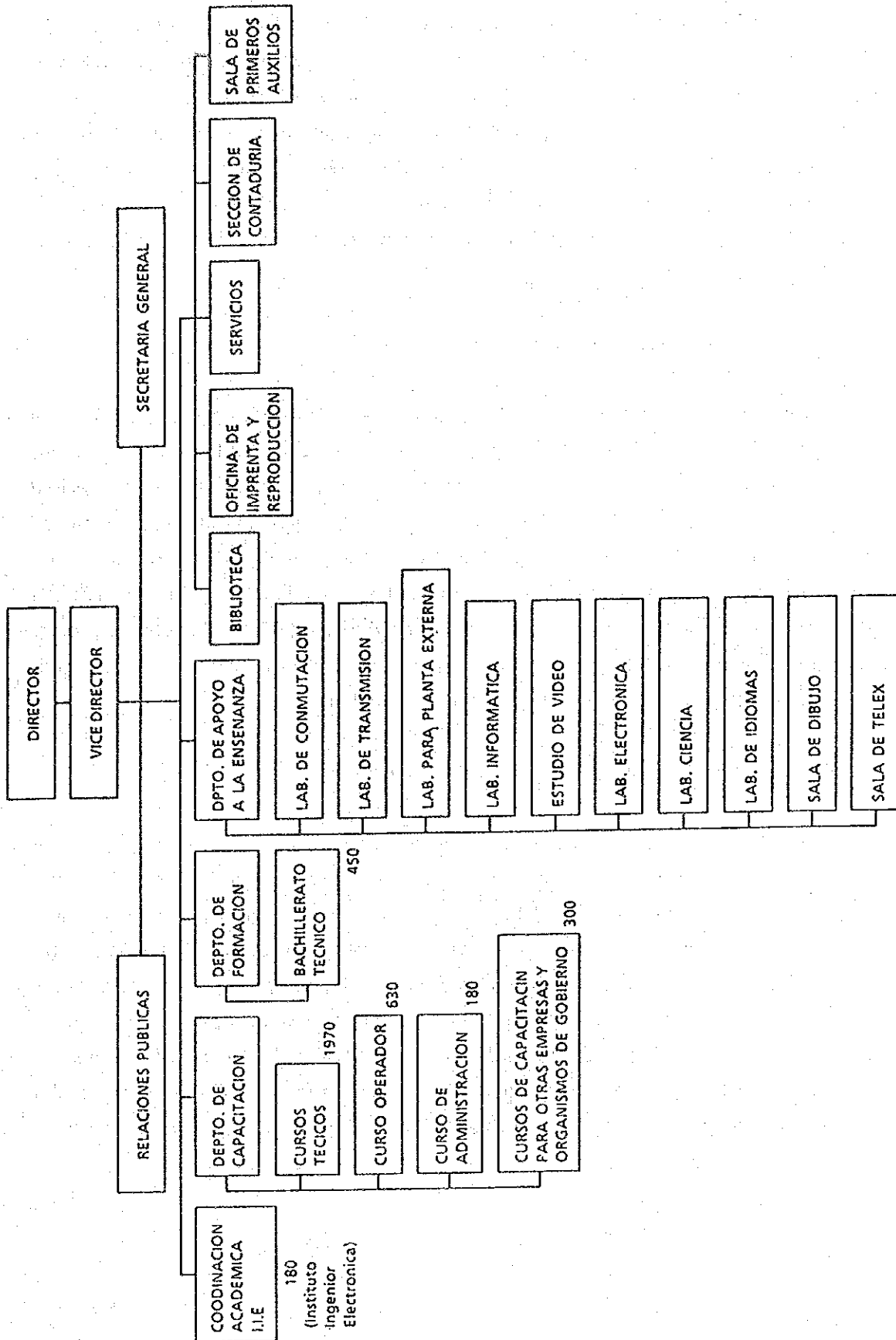


Figure 3.2.2.3 Deployment Plan of IPT



(4) Financial Situation

The budgetary allocation of the ANTELCO were Gs. 126 billion and Gs. 216 billion in 1991 and 1992 respectively. Its budget allocation of 1993 was Gs.303 billion which was ranked next to the same of PETROPAR and ANDE or sharing about 12% of total government budgetary allocation to 12 public corporations. The budget allocated for the MOPC which is a supervisory ministry of the ANTELCO in 1993 was Gs. 318 billion. From the view point of the magnitude of the budget allocation, the ANTELCO is thought to be one of the biggest entities in Paraguay.

3.3 TV Broadcasting Services

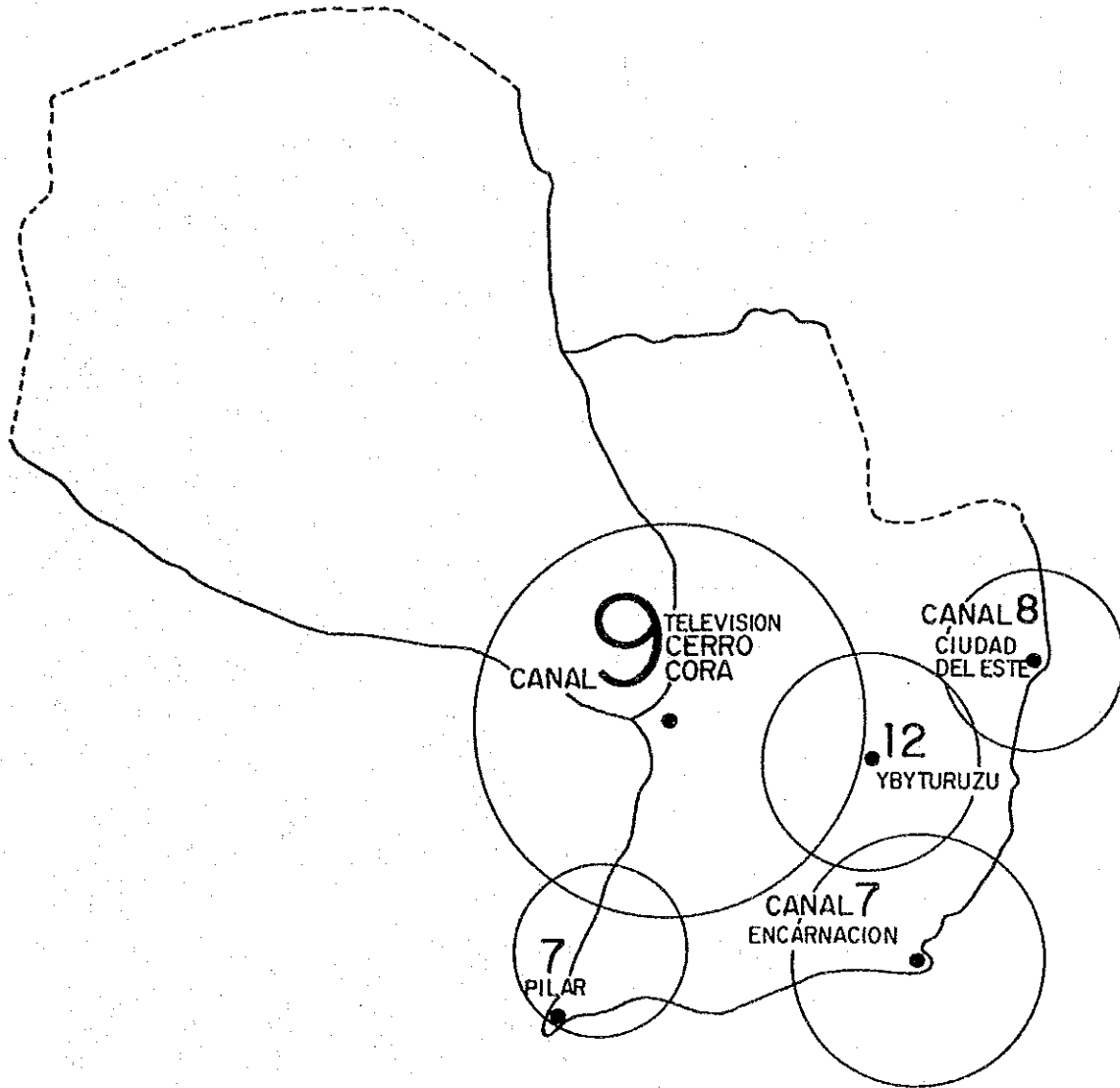
As mentioned in previous paragraph 3.2.1 broadcasting services in Paraguay are controlled and supervised solely by the ANTELCO, an entity organized under the MOPC, and empowered to control whole matter concerned broadcasting services in accordance with the established regulation of broadcasting services (Decree No. 26-504). The opening of radio and/or TV broadcasting stations require the approval of the ANTELCO. The ANTELCO does not limit his control and authority over the allocation of radio frequency but to supervise and inspect the operation, management, contents of program, technical matters, etc., concerned of the TV stations.

3.3.1 Present Situation of TV Broadcasting Services

A government owned television broadcasting station is none at present in Paraguay, but two commercial TV broadcasting services, namely Sistema Nacional de Television (Channel-9) and Tele-difusion Paraguaya S.A. (Channel-13), are in operation. Channel-9 owns 4 local broadcasting stations and Channel-13 owns 11 local broadcasting stations or repeaters. Both 2 systems cover most of eastern part of the country where 98% of national population concentrates. The service coverage of both stations in terms of number of population is 85% of total populace. Figure 3.3.1.1 and 3.3.1.2 illustrates the service coverages of both TV stations geographically. The profiles of these stations are described below:

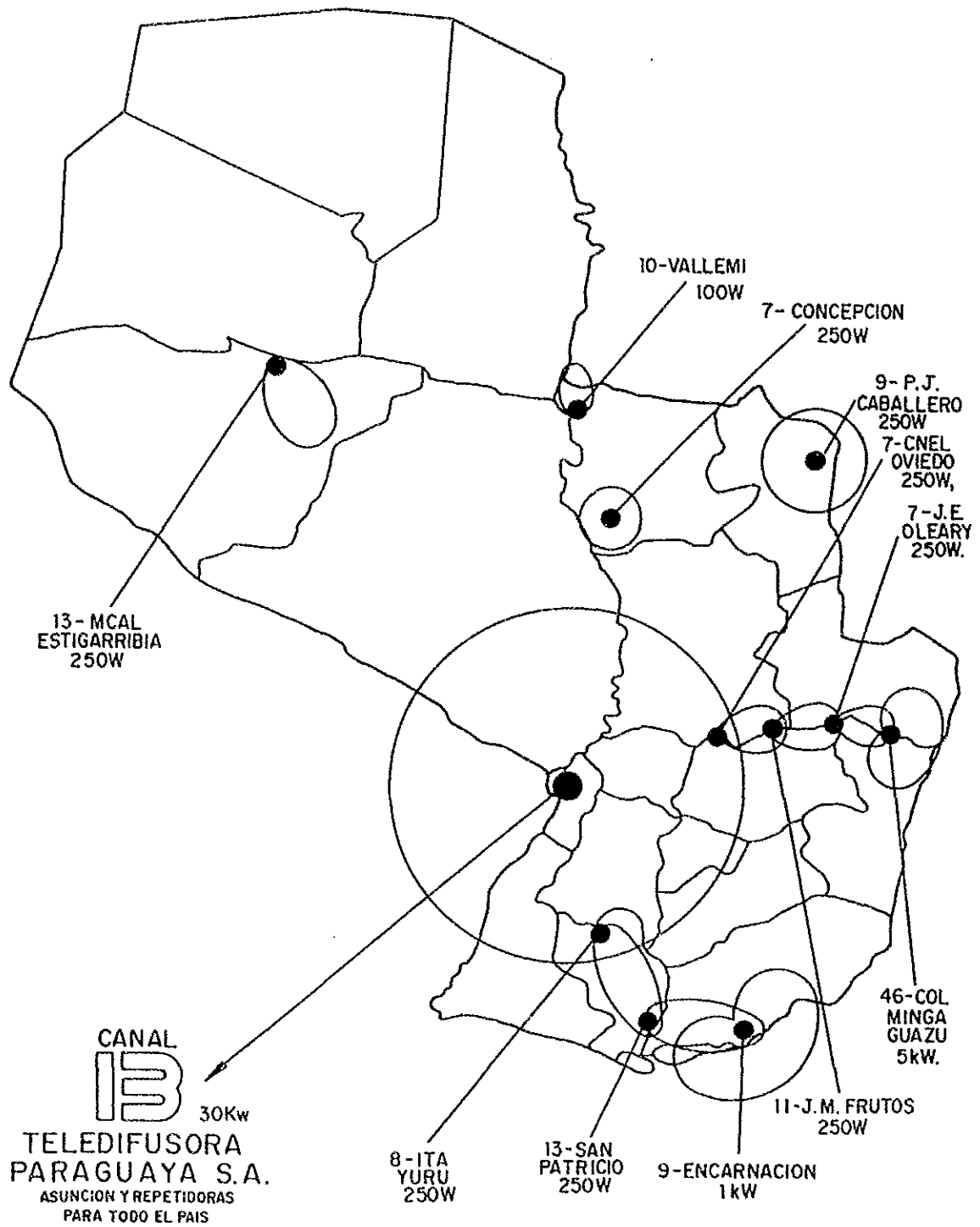
Figure 3.3.1.1 Geographical Service Coverage Chart of SNT

AREA DE COBERTURA DE
LOS CANALES DEL SISTEMA
NACIONAL DE TELEVISION



-
- CANEL 9 ASUNCION
 - CANEL 7 ITAPUA (ENCARNACION)
 - CANEL 12 YBYTUBUZU
 - CANEL 8 CIUDAD DEL ESTE
 - CANEL 7 PILAR

Figure 3.3.1.2 Geographical Service Coverage Chart of RPC



(1) Sistema Nacional de Television (SNT), Channel-9

This TV broadcasting station was opened in October 1966, having 2 local broadcasting stations and repeaters. The program transmission from its key station in Asuncion to the local stations is done through the stand-by telephonic microwave line of the ANTELCO. An expansion plan to cover the whole area of the country has been under planning. In this plan, 3 local stations are planned to be established and its operation and management is planned to be conducted independently within the business framework of the SNT as a holding company, thereby, a localization of management is envisaged. Its broadcasting hours at present is 21 hours starting from 06:00 and ending at 02:00. The operation of the station is done by 3 shifts. Below Table 3.3.1.1 shows the location and output power of transmitters respectively:

Table 3.3.1.1 Outline of TV stations of SNT, Channel-9

Location	Channel Number	Output Power	Nos. of Studio	Year of Opening
1. Asuncion	9	35 kW	2	1966
2. Este	8	5 kW	1	1982
3. Encarnacion	7	5 kW	1	1982
4. Villarrica	12	1 kW	-	1982
5. Pilar	7	1 kW	-	1982

The outline of this station is summed up in Table 3.3.1.3.

(2) Teledifusora Paraguaya S.A., (RPC), Channel-13

This commercial broadcasting station was established by acquisition of existing TV station in 1981 and owns 11 repeater stations at present. The program transmission from its key station in Asuncion to 3 local stations in M. Estigarriba, Concepcion and P.J.Caballero is done through the stand-by telephonic microwave line of the ANTELCO. Below Table 3.3.1.2 shows the location and output power of transmitter respectively:

Table 3.3.1.2 Outline of TV stations of RPC, Channel-13

Location	Channel Number	Output Power	Nos. of Studio	Year of Opening
1. Asuncion	13	30 kW	2	1981
2. Yuru	8	250 W	-	1981
3. Patrioio	13	250 W	-	1981
4. Encarnacion	9	1 kW	-	1981
5. Cnel. Oviedo	7	250 W	-	1981
6. Frutos	11	250 W	-	1981
7. Oleary	7	250 W	-	1981
8. Minga Guaza	46	5 kW	-	1981
9. Caballero	9	250 W	-	1981
10. Concepcion	9	250 W	-	1981
11. Vallemi	10	100 W	-	1981
12. Estigarribia	13	250 W	-	1981

The outline of these stations in details are summed up in Table 3.3.1.3.

3.3.2 Working Conditions in the commercial TV Broadcasting Stations

The working and employment conditions of both commercial TV stations differ slightly but basically are the same. The following Table 3.2.2.1 shows the outline of basic working and employment conditions of both commercial TV broadcasting stations.

Table 3.3.1.3 Profiles of the Commercial TV Stations

Name of Company	SNT	Teledifusora
Channel Number	9	13
Location of Key Stn.	Asuncion	Asuncion
a) Transmitting Facilities		
Transmitter		
Output Power (kW)	35	30
Tx. Method	PAL-N	PAL-N
Manufacturer	RCA, U.S.A.	RCA, U.S.A.
Year of Manufacturing	1966	1981
Antenna		
Type	4 dipole	4 dipole
Nos. of Element	4	4
Nos. of Step	4	4
Direction	Non-directional	Non-directional
Height of tower	120m	150m
Standing method	Wire Stay	Wire Stay
b) Studio Facilities		
Method	Standard	Standard
Color Method	PAL-B	PAL-B
Major Manufacturer	Sony	Sony
c) Outdoor Broadcasting Van		
	2	3
d) Broadcasting Period		
	06:00 - 02:00	05:30 - 23:30
e) Broadcasting Hours		
	21 week days	21 week days
	21 Fri., Stat.	24 Fri., Stat.
f) Program Production		
Self-production (%)	60	30
Imported Program (%)	40	70
Origin	U.S.A.	U.S.A.
	Argentina	Argentina
	England	Mexico
	Australia	Brazil
	Italy	Spain
	Others	Italy
		Chile
		Russia
g) Service Coverage (%)		
	85	25 of TV Rx

Table 3.3.2.1 Working Conditions in TV Stations

	Channel 9	Channel 13
1. Number of Staff		
Total	400	272
Headquarter	300	246
Local stations	100	26
Program Production	50	
Headquarter	30	
Local stations	20	
Engineering	200	
Headquarter	80	
Local stations	120	
2. Working Shift		
Operation		
First Shift	06:00 - 12:00	06:00 - 14:00
Second Shift	12:00 - 18:00	14:00 - 22:00
Third Shift	18:00 - 02:00	22:00 - 06:00
Administration		
First Shift	06:00 - 12:00	07:30 - 12:30
Second Shift	12:00 - 18:00	12:30 - 19:30
Third Shift	18:00 - 02:00	
3. Working Hours		
Ordinal Staff		
Day	8 hours	8 hours
Week	40 hours	40 hours
Production Staff	6 hrs per day	
4. Average Salary per Month		
Executive	US\$2,500	US\$2,200
Directors	US\$1,500	US\$1,500
Department Chief	US\$1,000	US\$1,000
Program production	US\$500 - US\$600	US\$470 - US\$580
Engineering	US\$500 - US\$600	
Office worker	US\$200	US\$330 - US\$580
Business promotion	US\$1,000	
5. Allowances		
Overtime works	50% per hour	40% per hour
Night works	100% per hour	100% per hour
Holiday works	100% per hour	100% per hour
6. Paid Leave		
1st year	7 days	6 days
2nd year	15 days	6 days
3rd year	15 days	6 days
4th year	15 days	12 days
5th year	30 days	12 days
6th year	30 days	30days
7. Working time control	Time card	Time card
8. Evaluation of salary	By manager and Mgr. of Personnel Affair	By manager and controller
9. Bonus		US\$100 for good program
10. Temporary staff	4 - 5 hrs per day	Assistant staff preparation of stages

3.3.3 Program Production

Of televised programs 60% at Channel-9 and 30% at Channel-13 are produced locally by either TV stations themselves or on contract basis with the local program producing companies. Entertainment, theater, documentary, political programs are mainly produced by the number of production companies. The number of such companies who satisfy the requirement of the TV stations is 4.

The means and cost of the program production are briefly described as follows:

(1) General Program

As mentioned above 60% of programs televised is produced locally and 40% of the program is imported by SNT. A cost of one wide program or special program is around US\$15,000 - US\$20,000. A typical weekly programs of a TV station are shown in Figure 3.3.3.1 as reference.

(2) News Program

Both TV stations have a number of specialized staff to gather the information concerned to economy, politics, social affairs, sports, etc. Local news is gathered by the agents using ENG and transmitted through a microwave telephone trunk line. A contract amount of news presentation with foreign news agencies such as ABC is around US\$10,000 per month. A charges paid for using satellite communication is US\$2,000 per 10 minutes.

(3) Program Producers

The number of skilled program producers in both TV stations is quite limited. Channel-9 has only 5 skilled producers. The commercial TV stations have dispatched program producers to abroad for their training in the training institutes abroad, however, Most of them are trained on-the-job-training basis due to a lack of finance. An average monthly salary of program producers at present is around US\$500 per month which is very high in comparison with an average salary of ordinary workers not only in the private sector but also in the public sector. The minimum wages regulated by the government is US\$160 per month equivalent to Gs. 258,000.

Figure 3.3.3.1 Typical Weekly TV Programs

PROGRAMACION ENERO 1993

HORA	DOMINGO	LUNES	MARTES	MIÉRCOLES	JUEVES	VIERNES	SABADO
1:00	NOTICIAS	NOTICIAS	NOTICIAS	NOTICIAS	NOTICIAS	NOTICIAS	NOTICIAS
6:00	CONTRIBUCION DE LOS 13	CONTRIBUCION DE LOS 13	CONTRIBUCION DE LOS 13	CONTRIBUCION DE LOS 13	CONTRIBUCION DE LOS 13	CONTRIBUCION DE LOS 13	CONTRIBUCION DE LOS 13
7:00	MESA FAMILIAR	MESA FAMILIAR	MESA FAMILIAR	MESA FAMILIAR	MESA FAMILIAR	MESA FAMILIAR	MESA FAMILIAR
7:30	CAMPO ABIERTO	CAMPO ABIERTO	CAMPO ABIERTO	CAMPO ABIERTO	CAMPO ABIERTO	CAMPO ABIERTO	CAMPO ABIERTO
8:00	EL SEÑO	EL SEÑO	EL SEÑO	EL SEÑO	EL SEÑO	EL SEÑO	EL SEÑO
8:30	MARCO DE BEB	MARCO DE BEB	MARCO DE BEB	MARCO DE BEB	MARCO DE BEB	MARCO DE BEB	MARCO DE BEB
9:00	MARIA MARIA	MARIA MARIA	MARIA MARIA	MARIA MARIA	MARIA MARIA	MARIA MARIA	MARIA MARIA
10:00	DIARIO DEPORTIVO DEL 13	DIARIO DEPORTIVO DEL 13	DIARIO DEPORTIVO DEL 13	DIARIO DEPORTIVO DEL 13	DIARIO DEPORTIVO DEL 13	DIARIO DEPORTIVO DEL 13	DIARIO DEPORTIVO DEL 13
11:00	NOTICIERO 13 1ra. EDICION	NOTICIERO 13 1ra. EDICION	NOTICIERO 13 1ra. EDICION	NOTICIERO 13 1ra. EDICION	NOTICIERO 13 1ra. EDICION	NOTICIERO 13 1ra. EDICION	NOTICIERO 13 1ra. EDICION
12:00	SIEMPRE EN DOMINGO	SIEMPRE EN DOMINGO	SIEMPRE EN DOMINGO	SIEMPRE EN DOMINGO	SIEMPRE EN DOMINGO	SIEMPRE EN DOMINGO	SIEMPRE EN DOMINGO
13:00	PURRA ITALIANO	PURRA ITALIANO	PURRA ITALIANO	PURRA ITALIANO	PURRA ITALIANO	PURRA ITALIANO	PURRA ITALIANO
14:00	BLANCO Y NEGRO	BLANCO Y NEGRO	BLANCO Y NEGRO	BLANCO Y NEGRO	BLANCO Y NEGRO	BLANCO Y NEGRO	BLANCO Y NEGRO
15:00	ALFRED J. KUAK	ALFRED J. KUAK	ALFRED J. KUAK	ALFRED J. KUAK	ALFRED J. KUAK	ALFRED J. KUAK	ALFRED J. KUAK
16:00	LOS MAPACHES	LOS MAPACHES	LOS MAPACHES	LOS MAPACHES	LOS MAPACHES	LOS MAPACHES	LOS MAPACHES
17:00	A L F	A L F	A L F	A L F	A L F	A L F	A L F
18:00	PARADISE	PARADISE	PARADISE	PARADISE	PARADISE	PARADISE	PARADISE
19:00	LA BOSTA	LA BOSTA	LA BOSTA	LA BOSTA	LA BOSTA	LA BOSTA	LA BOSTA
20:00	MI BIEN MI YA	MI BIEN MI YA	MI BIEN MI YA	MI BIEN MI YA	MI BIEN MI YA	MI BIEN MI YA	MI BIEN MI YA
21:00	JOYAS DEL CINE	JOYAS DEL CINE	JOYAS DEL CINE	JOYAS DEL CINE	JOYAS DEL CINE	JOYAS DEL CINE	JOYAS DEL CINE
22:00	CONTRA EL OLVIDO	CONTRA EL OLVIDO	CONTRA EL OLVIDO	CONTRA EL OLVIDO	CONTRA EL OLVIDO	CONTRA EL OLVIDO	CONTRA EL OLVIDO
23:00	AMARGA JUSTICIA	AMARGA JUSTICIA	AMARGA JUSTICIA	AMARGA JUSTICIA	AMARGA JUSTICIA	AMARGA JUSTICIA	AMARGA JUSTICIA
00:00	EXITOS EN MINISERIES	EXITOS EN MINISERIES	EXITOS EN MINISERIES	EXITOS EN MINISERIES	EXITOS EN MINISERIES	EXITOS EN MINISERIES	EXITOS EN MINISERIES
01:00	NOTICIERO 13 ULTIMA EDICION	NOTICIERO 13 ULTIMA EDICION	NOTICIERO 13 ULTIMA EDICION	NOTICIERO 13 ULTIMA EDICION	NOTICIERO 13 ULTIMA EDICION	NOTICIERO 13 ULTIMA EDICION	NOTICIERO 13 ULTIMA EDICION
02:00	ULTIMA FUNCION	ULTIMA FUNCION	ULTIMA FUNCION	ULTIMA FUNCION	ULTIMA FUNCION	ULTIMA FUNCION	ULTIMA FUNCION

Publicación Mensual de la Gerencia de Programación
 Diseño y Producción: Felipe J. - Textos: Ben Dume - Fotografía: Adolfo Tron
 Oficina Centralizada: Avenida Luis - Colación: Oficina de Operaciones de Clientes

PROGRAMACION DICIEMBRE 1992

HORA	DOMINGO	LUNES	MARTES	MIÉRCOLES	JUEVES	VIERNES	SABADO
1:00	NOTICIAS	NOTICIAS	NOTICIAS	NOTICIAS	NOTICIAS	NOTICIAS	NOTICIAS
6:00	CONTRIBUCION DE LOS 13	CONTRIBUCION DE LOS 13	CONTRIBUCION DE LOS 13	CONTRIBUCION DE LOS 13	CONTRIBUCION DE LOS 13	CONTRIBUCION DE LOS 13	CONTRIBUCION DE LOS 13
7:00	MESA FAMILIAR	MESA FAMILIAR	MESA FAMILIAR	MESA FAMILIAR	MESA FAMILIAR	MESA FAMILIAR	MESA FAMILIAR
7:30	CAMPO ABIERTO	CAMPO ABIERTO	CAMPO ABIERTO	CAMPO ABIERTO	CAMPO ABIERTO	CAMPO ABIERTO	CAMPO ABIERTO
8:00	EL SEÑO	EL SEÑO	EL SEÑO	EL SEÑO	EL SEÑO	EL SEÑO	EL SEÑO
8:30	MARCO DE BEB	MARCO DE BEB	MARCO DE BEB	MARCO DE BEB	MARCO DE BEB	MARCO DE BEB	MARCO DE BEB
9:00	MARIA MARIA	MARIA MARIA	MARIA MARIA	MARIA MARIA	MARIA MARIA	MARIA MARIA	MARIA MARIA
10:00	DIARIO DEPORTIVO DEL 13	DIARIO DEPORTIVO DEL 13	DIARIO DEPORTIVO DEL 13	DIARIO DEPORTIVO DEL 13	DIARIO DEPORTIVO DEL 13	DIARIO DEPORTIVO DEL 13	DIARIO DEPORTIVO DEL 13
11:00	NOTICIERO 13 1ra. EDICION	NOTICIERO 13 1ra. EDICION	NOTICIERO 13 1ra. EDICION	NOTICIERO 13 1ra. EDICION	NOTICIERO 13 1ra. EDICION	NOTICIERO 13 1ra. EDICION	NOTICIERO 13 1ra. EDICION
12:00	SIEMPRE EN DOMINGO	SIEMPRE EN DOMINGO	SIEMPRE EN DOMINGO	SIEMPRE EN DOMINGO	SIEMPRE EN DOMINGO	SIEMPRE EN DOMINGO	SIEMPRE EN DOMINGO
13:00	TOP MODEL	TOP MODEL	TOP MODEL	TOP MODEL	TOP MODEL	TOP MODEL	TOP MODEL
14:00	TIRA PARA ARRIBA	TIRA PARA ARRIBA	TIRA PARA ARRIBA	TIRA PARA ARRIBA	TIRA PARA ARRIBA	TIRA PARA ARRIBA	TIRA PARA ARRIBA
15:00	PURRA ITALIANO	PURRA ITALIANO	PURRA ITALIANO	PURRA ITALIANO	PURRA ITALIANO	PURRA ITALIANO	PURRA ITALIANO
16:00	BLANCO Y NEGRO	BLANCO Y NEGRO	BLANCO Y NEGRO	BLANCO Y NEGRO	BLANCO Y NEGRO	BLANCO Y NEGRO	BLANCO Y NEGRO
17:00	ALFRED J. KUAK	ALFRED J. KUAK	ALFRED J. KUAK	ALFRED J. KUAK	ALFRED J. KUAK	ALFRED J. KUAK	ALFRED J. KUAK
18:00	LOS MAPACHES	LOS MAPACHES	LOS MAPACHES	LOS MAPACHES	LOS MAPACHES	LOS MAPACHES	LOS MAPACHES
19:00	A L F	A L F	A L F	A L F	A L F	A L F	A L F
20:00	PARADISE	PARADISE	PARADISE	PARADISE	PARADISE	PARADISE	PARADISE
21:00	LA BOSTA	LA BOSTA	LA BOSTA	LA BOSTA	LA BOSTA	LA BOSTA	LA BOSTA
22:00	MI BIEN MI YA	MI BIEN MI YA	MI BIEN MI YA	MI BIEN MI YA	MI BIEN MI YA	MI BIEN MI YA	MI BIEN MI YA
23:00	JOYAS DEL CINE	JOYAS DEL CINE	JOYAS DEL CINE	JOYAS DEL CINE	JOYAS DEL CINE	JOYAS DEL CINE	JOYAS DEL CINE
00:00	CONTRA EL OLVIDO	CONTRA EL OLVIDO	CONTRA EL OLVIDO	CONTRA EL OLVIDO	CONTRA EL OLVIDO	CONTRA EL OLVIDO	CONTRA EL OLVIDO
01:00	AMARGA JUSTICIA	AMARGA JUSTICIA	AMARGA JUSTICIA	AMARGA JUSTICIA	AMARGA JUSTICIA	AMARGA JUSTICIA	AMARGA JUSTICIA
02:00	EXITOS EN MINISERIES	EXITOS EN MINISERIES	EXITOS EN MINISERIES	EXITOS EN MINISERIES	EXITOS EN MINISERIES	EXITOS EN MINISERIES	EXITOS EN MINISERIES
03:00	NOTICIERO 13 ULTIMA EDICION	NOTICIERO 13 ULTIMA EDICION	NOTICIERO 13 ULTIMA EDICION	NOTICIERO 13 ULTIMA EDICION	NOTICIERO 13 ULTIMA EDICION	NOTICIERO 13 ULTIMA EDICION	NOTICIERO 13 ULTIMA EDICION
04:00	ULTIMA FUNCION	ULTIMA FUNCION	ULTIMA FUNCION	ULTIMA FUNCION	ULTIMA FUNCION	ULTIMA FUNCION	ULTIMA FUNCION

Publicación Mensual de la Gerencia de Programación
 Diseño y Producción: Felipe J. - Textos: Ben Dume - Fotografía: Adolfo Tron
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3.3.4 TV Commercial Advertisement

The revenue of both commercial TV broadcasting companies is totally generated from selling TV spaces for the commercial advertisement of private interests. The number of private companies using TV and/or radio as a media for their commercial advertisement is estimated around 300. Of these thirty companies are thought to be major contributors of revenues. These advertisers are mostly of food processors, beverage bottlers, breweries, tobacco producers, apparel industries, supermarkets, bankers, etc. A number of major advertisement agency is around 50, and around 10 among them carry on transaction with both TV stations. The biggest commercial advertisers for both TV stations are internationally well known beverage bottlers. One international famous beverage bottling company alone spends about US\$ 6 million for TV commercial broadcasting per year to carry out 17 - 20 spots or about total 7 minutes (average length of spot 20 seconds) per day.

A volume of commercial advertisement in the effective broadcasting hours is about to be regulated as maximum 20% or 12 minutes per hour. The length of commercial advertisement ranges from 5 seconds to 60 seconds or more. An average length of one spot is around 20 seconds. The commercial advertisement film is produced by a number of specialized commercial film production agencies and the produced film are inserted into the broadcasting program prior to the televising of its program. The charges of commercial advertisement per second ranges from Gs. 6,750 to Gs. 60,000 according to timeframe of a day and TV stations. The Table 3.3.4.1 shows the indicative TV commercial advertisement charges per second. As shown in this table, so called golden hours is period of 18:00 - 23:00.

Table 3.3.4.1 TV Commercial Advertisement Charge per Second

09:00 - 12:00	Gs. 6,750
12:00 - 15:00	Gs. 25,000
15:00 - 18:00	Gs. 6,750
18:00 - 20:00	Gs. 35,000
20:00 - 23:30	Gs. 60,000
23:30 - 24:00	Gs. 6,750

3.3.5 Private Production Houses

(1) General

There are more than 10 production houses in Paraguay and all of them operates in Asuncion. Of these 10 production houses, following 4 companies are considered as a major production houses.

1. Orange
2. ALTA Producciones
3. Carlos Saguier
4. Enfoque

A number of staff of such production houses is around 10 persons, composed of cameraman, editor, lighting staff, sound staff and assistants managed under a production chief similar to the formation of staff for movie film production. The equipment are composed of camera, recorder, editor, sound mixer, etc., and a certain company owns a small scale studio equipped with number of camera and hand held cameras.

(2) Products

Most of the products produced by such production houses are TV commercial films and documentary films for advertisement related to industrial, business, social, political and economic issues. In some cases, numbers of fiction programs are produced. As for TV commercial advertisements film, the major clients are the importers of foreign products related to industry, beverage, metal fabrication, medicine, sanitary goods, etc. As for documentary film, major clients are the manufacturers of industrial products to introduce their manufacturing process, and non-governmental organization and/or churches concerned to social, political, economic issues.

(3) Cost of Production

The production cost of programs depends on a necessary days for production, but in average cost of production is as follows:

- a) Commercial program Min. US\$500 - Max. US\$5,000
- b) Documentary program Min. US\$1,500 - Max. US\$15,000

(4) Private Training Institute for Program Production

A private training institute specialized for program production named IPAC was established in 1990. The period of training is 3 years and courses are held at night (19:00 - 22:00) to train students who have jobs in the daytime and are willing to become professional audio-visual program producers.

3.4 Radio Broadcasting Services

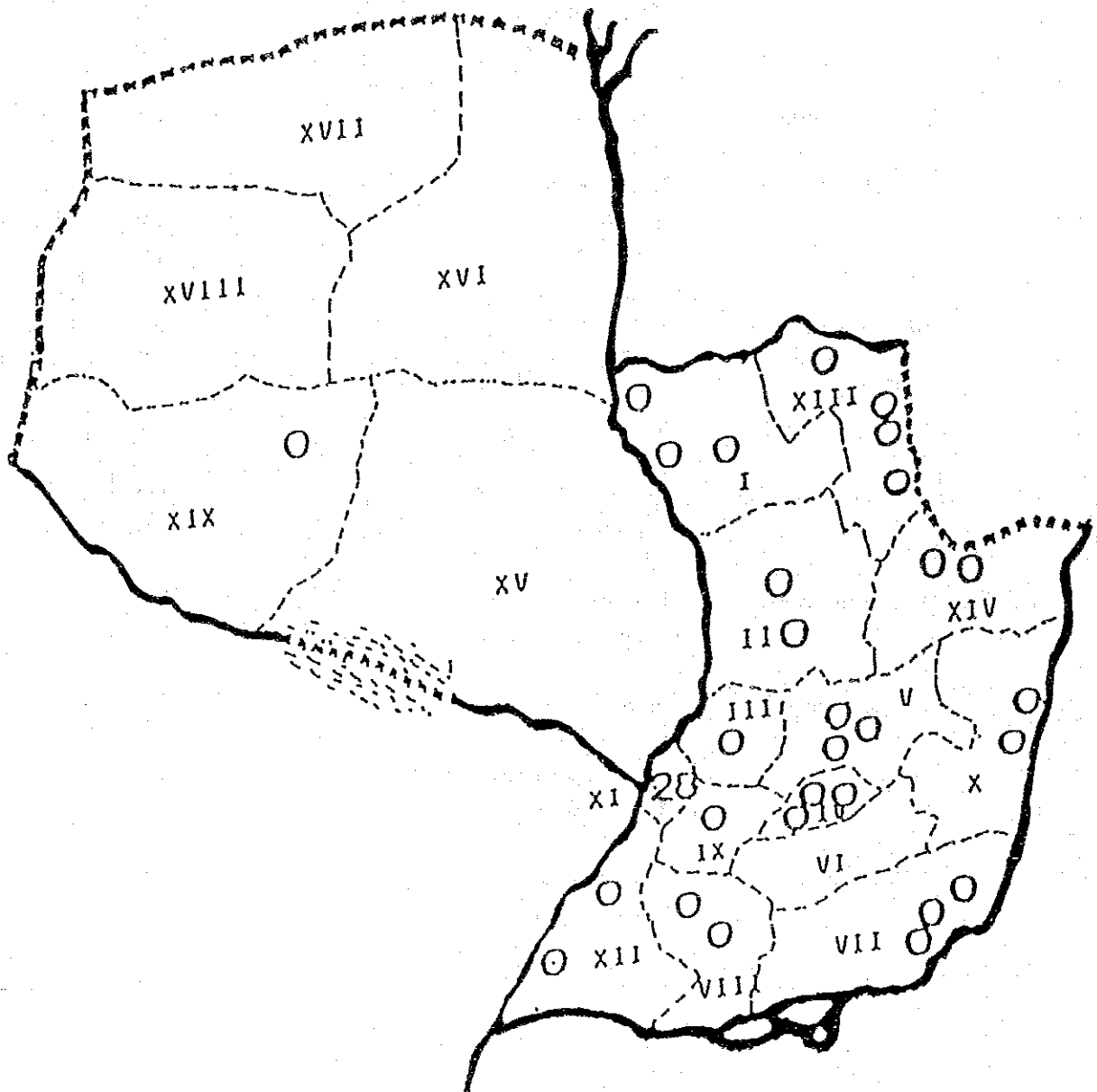
The number of the radio stations registered with the ANTELCO is 84 stations in total, 46 AM, 30 FM, and 7 SW stations respectively as of 1989. The number of FM stations increased rapidly in 1970's, and most of them are for entertainment music. Most of AM stations run news and talk programs. ZP1 Radio Nacional del Paraguay, national radio station, alone covers whole area of the country locating 40 kW output key station in Asuncion. From the administrative point of view, the Radio Nacional is attached to the Presidential Office directly. The geographical distribution of the radio stations is shown in below Table 3.4.1 and Figure 3.4.1.

Table 3.4.1 Geographical Distribution of Radio Stations

Department	Name of Radio Station	Frequency	
XI	Central	3 de Febrero (ITA)	AM
		Asuncion	AM
		Caritas	AM
		Comuneros	AM
		Guarani	AM
		Nacional del Paraguay	AM
		Nanawa (Luque)	AM
		Nuevo Mundo (S.L.)	AM
		Ypacarai (Ypacarai)	AM
		10 de Marzo	AM/FM
		Chaco Boreal	AM/FM
		Emisoras Paraguay	AM/FM
		Naduti	AM/FM
		15 de Agosto	FM
		Canal 100	FM
		Cardinal	FM
		Cordillera	FM
		Cristal	FM
		Curpayty	FM
		Fernando de la mora	FM
	Tayi	FM	
	Venus	FM	
	Yacyreta	FM	
	Ysapy	FM	
	Reloj	FM	
I	Concepcion	Concepcion	AM
		Ybyyau	AM
		Vallemi	AM
II	San Pedro	Ycua Mandiyu	AM
		Nasaindy	AM
III	Cordillera	La Voz de la Cordillera	AM
IV	Guaira	Guaira	AM
		Panambi Vera	AM
		Cultura	AM

	Department	Name of Radio Station	Frequency
V	Caaguazu	Radiofisoras Caaguaz	AM
		Centerario	AM
		Cronel Oviedo	AM
VI	Caazapa	Caazapa	AM
VII	Itapua	Encarnacion	AM
		Parana	AM
		Ybypyta	AM
VIII	Misiones	Arapizandu	AM
		La Voz de Misiones	AM
IX	Paraguari	Ypoa	AM
X	Alto Parana	Parque	AM
		Ita Piru	AM
XII	Neembucu	Boqueron	AM
		Carlos A. Lopez	AM
XIII	Amambay	Mcal. Lopez	AM
		Cerro Cora	AM
		La Voz del Amambay	AM
		Miburuchuya	AM
XIV	Canindeyu	Mbaracayu	AM
		Salto del guaira	AM
XIX	Boqueron	La Voz del Chaco	AM

Figure 3.4.1 Geographical Distribution Map of Radio Stations



3.5 Present Situation of Cable TV

3.5.1 General

There are 18 cable television (CATV) companies in operation in Paraguay including a small scale CATV system of which number of subscribers is only 250 households. A total number of subscribers of CATV system in Paraguay at present is estimated around 50,000 households (About 7% of total household) at present. In Asuncion alone a number of subscribers has increased to around 30,000 households in the past three years. It is expected to reach 40,000 within coming three years.

The largest CATV company emits 24 channels of which 99% are program procured from abroad except 2 local channels of SNT and RPC. The origin of each channel is shown in Table 3.5.1.1. As shown in this table, 2 channels are for re-transmission of programs of local commercial TV stations and most of channels are for international programs through satellite broadcasting services.

3.5.2 Management System

The operation of CATV system is dependent on the subscriber membership fees (US\$50 at a time of entering into contract) and the monthly subscribing charges (US\$25 per month). Amount paid annually to the international broadcasting services is estimated around US\$1.5 - 2.0 million for 22 channels.

A number of staff in the largest CATV company is 160 composed of following:

Engineering	70
Production Director	25
Business Promotion	40
<u>Administration</u>	<u>15</u>
T o t a l	160

3.5.3 Educational Program

It is a condition regulated by the Government to establish a CATV station that at least 1 channel should be allocated for the educational program.

Table 3.5.3.1 Emission of CATV by the Largest CATV Company

Channel No.	Name of Channel	Country of Origin
1 02	RPC	Paraguay
2 03	SNT	Paraguay
3 04	TV Cinema	Paraguay-Propio
4 05	CNN	USA
5 06	ESPN	USA
6 07	SBT	Brazil
7 08	KABLITO	Paraguay-Propio
8 10	LIBERTAD	Argentina
9 11	TVO	Espania
10 12	ECO	Mexico
11 13	TELEVEN	Venezuela
12 14	VENEZOLANA DE TV	Venezuela
13 15	SIEMPRE VISION	Argentina
14 15	RAI	Italy
15 16	Radio Iro de Marzo	Paraguay-Music
16 18	MANCHETE	Brazil
17 19	TELEFE	Argentina
18 20	TNT	USA
19 21	Television National de Chile	Chile
20 22	Radio Venus	Paraguay-Music
21 23	HBO Ole	USA
22 24	WORLDNET	USA
23 25	BANDEIRANETES	Brazil
24 26	TV CULTURA	Brazil

3.6 Present Status of Pay TV

(1) Number of Channels Used by TVD (A company's Name of Pay TV in Asuncion), and Program Contents

One year and 7 months have passed since its opening in August 1991, TVD is now in a period of expansion. TVD at present is broadcasting on 7 channels, from CH21 to CH33. The channel numbers and their respective program contents are as follows:

- CH21 Old feature films.
- CH23 Broadcasts from Argentina, including news, dramas, comedies and comics.
- CH25 Sports programs, 60% of them is on sports from Brazil in the season.
- CH27 Sixty percent (60%) are news, the rest comprising comedies and comic show.
- CH29 New feature films.
- CH31 Diversified programs (independently-produced programs) including cultural, educational and sports.
- CH33 Argentine's independently-produced programs including comedies and dramas.

Of the 7 channels, one (CH31) broadcasts independently-produced programs. The remaining 6 channels broadcast programs procured from foreign countries. Recently, however, the procurement of foreign programs via satellite has increasingly become extremely difficult for a number of reasons, such as, intensifying competitions from commercial TV stations and CATVs and interventions by brokers.

TVD has recently been buying programs from Chile, Venezuela, Germany and Spain as well. the number of programs TVD produces on its own is yet quite small. Although there is no formal programming schedule yet, TVD plans to draw up a proper one from March 1993 onwards. At present, whenever TVD has a plan of broadcasting some big events such as football and boxing, it publicizes its schedule each time in newspapers.

(2) Subscriptions

- 1) Number of Subscribing Households : 13,000 - 14,000
- 2) Initiation Fee : Gs. 110,000 at the start of subscription, a UHF antenna and a decoder are installed by TVD.
- 3) Monthly Amount : Gs. 27,000
- 4) Characteristics of Subscribers : Households in the middle or higher classes with a monthly income of Gs. 700,000 - 800,000. Inhabitants of the rural regions have little interest in information even though they have high income.

(3) Coverage

About 27-28 km in radius. TVD has a plan to eventually cover the entire central area by setting up repeaters.

(4) Number of Personnel

- Engineers 13 (of which 4 are in charge of transmission)
- Program Directors 3
- Audience-service Engineers and Sales persons 44 - 54

(5) Technical Data

- 1) Transmitter Output 1 kW TRO 1000C/STD
Industri Argentina IA Electronica
- 2) Antenna Height 60m
- 3) Scramble System TOCOM
Headend Video Processor General Instrument Made in the U.S. and assembled in Brazil.

(6) Other Data

- | | |
|-----------|---|
| 1) TVRO | 6m ϕ ×2 |
| | 4m ϕ ×2 |
| Brazilsat | 4m ϕ |
| Panamsat | 4m ϕ |
| Intelsat | RAI, TVE, Argentine, Chile, Mexico and HBO. |
- 2) TVD adopts a computer system directly linked with the subscribers, a system that enables TVD to switch off broadcasts in case of non-payment of subscription.

3.7 Existing Telecommunication Development Plans

3.7.1 Future Development Plan of Microwave Line of the ANTELCO for TV transmission

At present TV transmission lines connecting Asuncion with below cities are in operation.

- Encarnacion and Pilar
- Ciudad del Este and Salto del Guaira
- Concepcion and Pedro Juan Caballero
- M. Estigarribia

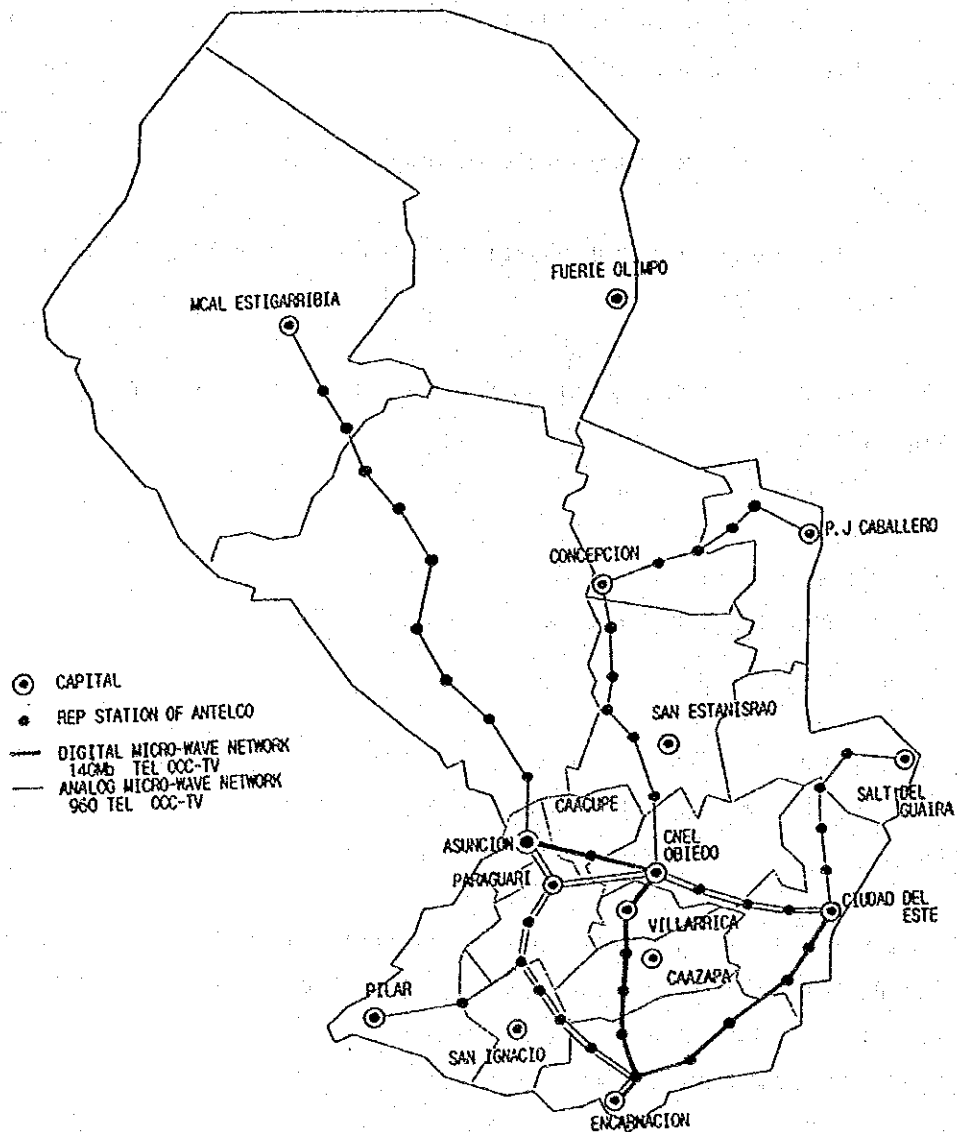
All of these lines are of analog type and becoming superannuated. The lines are so called locally as occasional line, which is stand-by line of primary telephone line.

The network of microwave link is shown in Figure 3.7.1.1. These lines used for TV transmission are almost occupied by the 2 commercial TV stations, this means that there is no room for the purpose of new educational TV broadcasting network under planning.

However, a new digital microwave network connecting Asuncion with Encarnacion and Ciudad del Este has been completed recently. It is scheduled to start its operation from March 1993. Using this digital microwave line, transmission of TV signals for the new educational TV network can be realized.

As for the north line which stretches to Concepcion and further to Pedro Juan Caballero, a new digital line is planned to be installed after 1997 at present, however, since program transmission to Pedro Juan Caballero is considered to be of urgent matter, the installation schedule will be set earlier than its present schedule.

Figure 3.7.1.1 Network of Microwave for TV



3.7.2 Iberoamerica Education TV Program

(1) Program distribution plan

The inauguration of Iberoamerica education TV association was June 12, 1992 and started its educational TV program broadcasting services from the 1st quarter of 1993. The service coverage via Hispasat satellite ranges from New York to Fuego island covering almost both north and south America continents.

For the setting up of the project, 126 educational institutions of Latin American countries, including Paraguay, Spain and Portugal had concluded an agreement.

Commemorating 500 years since discovery of America by Columbus, the Hispasat satellite I was launched by Aryan IV rocket in Sep. 1992 from Kourou space base and is now on the orbit. And the Hispasat II is scheduled to be launched in the beginning of 1993.

The broadcasting service will start from the first quarter of 1993, and 3 hours educational TV programs daily from Monday to Friday are planned to be commissioned via Hispasat satellite.

Aiming at the rapid expansion of a number of receivers, at present the charges are offered as free. However, US\$1,000 is to be paid as an annual membership fee. Paraguay, as a member of Iberoamerica, is entitled to use the programs for the nation's education as well as provide its own educational programs to the service when the educational TV program production is matured.

The educational programs offered are health and hygienic programs, vocational programs, environmental pollution programs, supplementary science programs, succeeding training programs for teachers, courses for school graduates and expansion courses of university education, etc.

The currently scheduled on-air programs are as shown in Table 3.7.2.1. To prepare the programs scheduled to be broadcasted in 1993, the Organizations Panamericana de Salud (OPS) has offered its 20 min. health programs daily which are hygienic programs for preventing diseases, health keeping, hygienic food, etc., and supporting programs for experts who are working for health promotion in rural areas are also planned.

Those programs are designed to give the people necessary knowledge on medical science and nursing as well as appropriate information for decentralization of medical activities.

Table 3.7.2.1 Program Table of Iberoamerica Education TV

	Monday	Tuesday	Wednesday	Thursday	Friday	
Environment	Environment & Nature	School programs	Environment	School programs	Environment	1st hour
	Health	Language	Health	Language	Health	
	Family & Society	Language	Family & Society	Language	Debate interview	
Science & Culture	Science	Humanistic & social science	Science	Humanistic & social science	Who are we?	2nd hour
	Science	Humanistic & social science	Science	Humanistic & social science	Who are we?	
	Vocational Training	Humanistic & social science	Vocational Training	Humanistic & social science	Who are we?	
University	Engineering	Training of teachers	Medical science	Expansion of Science	Economics & Enter prise	3rd hour
	Engineering	Science	Medical science	Humanistic & social science	Economics & Enter prise	

Organizacion Internacional de Trabajo (OIT) has offered their programs in terms of vocational promotion through Latin America branch organization (CINTERFOR). Those programs will contribute to systematic information dissemination of employment as well as effective vocational education, thus promotion of equal opportunity among people and eliminating currently existing segregation among young people living in disadvantaged condition and also handicapped people.

From "La Oficina Regional para America y Caribe(OREALC)" environmental pollution programs are offered by cooperation of universities in the region. The programs aim at promotion of awareness on environmental pollution among people and supporting of training school teachers in a long term view point.

Furthermore, from universities of Iberoamerica, programs on new technology, education methodology, administration of enterprises are scheduled to be offered. And also, anti-drug programs are presented as well.

(2) Program transmission system of Iberoamerica educational television

Hispasat satellite which is stationed on the equator orbit, the west longitude 30° - 31° is providing the both way exchange between America and Europe. The frequency of transponder is KU Band (14-12 GHz). From its Madrid station, the educational programs are transmitted through 2 transponders with 36 MHz bandwidth, to the north and South America continent.

The TV standard is of NTSC system. The receiving parabolic antennas are to be 16.m-2.2m diameters (at S/N=48 dB) which differ according to the geographic locations of receivers. In Asuncion, the antenna size is to be min. dia. 2.5 m (for professional use) and 2.0 m for private receivers.

Through the 2 transponders of the Hispasat, in addition to the transmission of educational TV programs, new technological achievement such as high resolution TV, multi-digital sound transmission for radio and satellite news gathering, etc., are scheduled to be transmitted.

On the other hand, transmission from America to Europe, 2 wide band transponders with 72 MHz band and 54 MHz band are prepared. The signal can be received in Europe and also in the west Africa.

The first communication through Hispasat is planned to begin from the beginning of 1993 and its expected system life is estimated as 10 years.

PART II

MASTER PLAN

CHAPTER 1 EDUCATIONAL BROADCASTING UTILIZATION AND DEVELOPMENT PLANS

1.1 Objectives of Educational Broadcasting and Development Scenario

1.1.1 General

The present Master Plan deals with the establishment of an educational TV broadcasting network with a target year of 2010.

The objectives of educational TV broadcasting to be achieved by 2010 can be defined by considering educational characteristics of television and roles it can take in meeting the current and future educational needs of Paraguay.

Based on this understanding, the Master Plan study shall address the need to concretely establish an effective educational utilization plan to maximize benefits of the proposed educational TV broadcasting network project.

1.1.2 Educational Characteristics of Television and Application in Education

Television is an excellent medium to convey facts in a concrete and efficient manner. It is an integrated medium of images and language and is characterized by vast simultaneous coverage and swift reporting with reality. The use of television in education is generally said to have positive effects due to the multiplication of the recognition function (Provision of accurate data and/or information for the better understanding of pupils and students) and the motivation function (stimulation of the interest of pupils and students to motivate them to study harder).

Education using television cannot be expected to grow into an independent field of education, i.e. "television education", and is the application of a specific medium of communication to assist the educational activities of the Government. In short, it is an attempt to improve the efficiency and effectiveness of education by means of television in the following manner.

(a) Wide Use of Television for Educational Improvement Activities of the Government

The lack of sufficient funds is both a common and pressing problem in developing countries which are trying to develop their education systems. When the establishment of a new source of income or the expansion of an existing source of income is difficult due to a tight financial circumstances, the most important and realistic means of improving the efficiency of the educational program is by making the best use of the available educational resources under the constraints of a limited budget. In the case of television broadcasting, easy access to education by a large number of people is possible provided that a sufficient number of television sets are available. In addition, the service cost per capita is relatively low. Consequently, the inclusion of television education in a conventional educational development program in an appropriate manner makes the achievement of the learning targets envisaged by such a program possible.

(b) Educational Activities Using Mass Media (Mass Education)

The skillful utilization of the mass media enables expansion of the access to education by groups of people whose educational prospects have hitherto been restricted. It also meets the educational demands of a wide range of people, for example, the illiterate, young people, women and adults. The use of communication media for educational services can effectively achieve a nationwide improvement of both academic and other types of learning by supplementing the existing educational mechanism.

1.1.3 Educational Issues in Paraguay

(1) Current Educational Conditions

The current educational conditions in Paraguay have already described in details in Chapter 2 of PART I. The main findings are as follows.

- (a) Both the primary and secondary education face serious problems in terms of a low retention rate and poor academic performance. One of the priority themes is the improvement of the academic